Dear Colleague:

NON-LIVING COLLECTIONS
Summer, 2003

Enclosed please find sample narratives and schedules of completion from eight successful applications from the 2003 IMLS Conservation Project Support (CPS) grant competitions.

INSTITUTE of MUSEUM and LIBRARY SERVICES

The attached samples were selected because they demonstrate how individual institutions with different conservation needs successfully developed projects that address those needs. We feel these narratives are logically and clearly presented, and give sufficient information to support the request.

This packet contains eight samples that represent different types of conservation projects. They emphasize the overall institutional conservation perspective, the involvement of conservation professionals in all phases of the project, and the importance of the project as the highest institutional priority for collections care.

In addition, there are three samples of funded education components. We hope that these samples give you the impetus to partner with your staff educators to develop your own creative way to educate the general public about your conservation project.

The samples included in this packet are listed on the back of this letter.
No endorsement by IMLS of any personnel, conservation facilities, private firms, or conservation procedures and methods identified in the narratives should be assumed.

I hope that these sample narratives will be useful to you as models for structuring a proposal for your conservation needs. IMLS Office of Museum Services program staff is available at (202) 606-8539 or imlsinfo@imls.gov, and will be happy to discuss any questions you have as you develop your proposal.

The application deadline for the 2004 Conservation Project Support grant program is:

October 15, 2003

Applications for CPS are available from the IMLS Web site (www .imls.gov), or by calling us at 202-606-8539. We look forward to receiving your application.

Sincerely,

Mary Estelle Kennelly

Mary Estelle Kennelly
Associate Deputy Director for Museum Services
IMLS

Sample Conservation Projects: Non-Living: Collections

Project Type	Museum	State	Award	Match	Project	Budget	Discipline
General Survey	Country Music Foundation	TN	$9,750	$12,111	$21,861	$5,145,217	General
Detailed Survey	Henry Ford Museum & Greenfield Village	MI	$50,000	$67,485	$117,485	$45,659,000	History
Detailed Survey	University of New Mexico Art Museum	NM	$16,640	$16,648	$33,288	$419,665	Art
Environmental Survey	Slate Valley Museum	NY	$4,492	$4,492	$8,984	$95,700	History
Treatment	University of PA Museum of Archaeology & Anthropology	PA	$30,349	$30,387	$60,736	$11,303,000	Natural History/ Anthropology
Treatment	Marblehead Historical Society House	MA	$40,000	$43,277	$83,277	$247,228	Historic
Environmental	She1burne Museum	VT	$42,050	$42,363	$84,413	$5,252,301	General
Environmental	Nichols House Museum	MA	$11,561	$14,100	$25,661	$88,000	Historic House

Sample Education Components:

Museum	State	Education Award	Total Grant Award
Oregon Zoo	OR	$9,997	$50,960
University of California, Davis Arboretum	CA	$10,000	$46,392
Weatherspoon Art Museum	NC	$4,247	$49,711

Country Music Foundation

Nashville, Tennessee

Project Type: General Survey
MLS Award: $9,750
Match: $12,111
Total Project: $21,861
Museum Budget: $5,145,217

Country Music Foundation
IMLS CONSERVATION PROJECT SUPPORT
Application Narrative

1. What is the design of the project?

The Country Music Foundation (CMF), which operates the Country Music Hall of Fame and Museum, is requesting IMLS support to engage a professional conservation specialist (the Consultant), who will perform a general conservation survey of CMF's collections, the bulk of which are housed at the museum's new facility completed in downtown Nashville in May 2001. The specialist will also review materials stored at an off-site storage facility and the collections of two historic sites owned and operated by CMF: Hatch Show Print, a wood block poster print shop that has operated in Nashville since 1879, and RCA Records' Studio B, a recording studio that served as one of the city's major recording facilities from 1957-1977. To address, prioritize, and balance its varying preservation issues, the Consultant will work with CMF staff to amass data necessary to set goals and objectives for a revised, comprehensive plan for collecting and caring for a wide variety of materials.

The Consultant will lead a team consisting of CMF's senior curator and other curators responsible for various materials in the collection, and will work directly with CMF's vice president for museum services, who will serve as Project Manager in addition to her role as archiving expert. Each team member will help the Consultant survey and report on that part of the collection for which he or she is responsible; in addition, team members will assist one another as the work progresses, so that members will become better informed about conservation needs throughout the collection. Since CMF is increasingly integrating large, multi-media donations into its holdings, this sort of teamwork and cross-training is essential to the institution's curatorial functions. This approach will also prepare team members for assisting the Consultant in completing an internally consistent final report setting forth recommendations for future CMF conservation activities.

The general goals, objectives, and plan of work for the consultant and her CMF staff team members are based on recommendations detailed in *The Conservation Assessment: A Tool for Planning, Implementing, and Fundraising,* produced by the Getty Conservation Institute in tandem with the National Institute for the Conservation of Cultural Property. The project will include three phases:

PHASE ONE: GATHERING INFORMATION, May 15 - June 30, 2003

First, CMF staff will provide the consultant with requested information prior to her first site visit. This information will include a completed Pre-Visit Questionnaire from *The Conservation Assessment* and will garner data on numbers and types of items in the collection, their condition, and their environments. (See Pre-Site Visit Documents, in Supplemental Materials.) CMF staff respondents will include the primary project team: the vice president for museum services (general conditions, manuscripts), the assistant librarian (recordings), the audio/video curator, the historian (oral history materials), the photographic curator, the preparator, the director of exhibits, and the Hatch Show print manager. Although not part of the primary team, the facilities manager, the special events coordinator, the museum store manager, and personnel responsible for on-site food service will also provide information to the Consultant. The Consultant will be available by telephone to discuss the pre-visit information and any other questions raised by staff or by Board Members who serve on the board's collections committee.

The Project Manager will work with the Consultant and CMF staff to prepare an agenda for surveying each component of CMF's collections and operations prior to the consultant's site visit, so that interviews with staff can be scheduled and materials retrieved. Agendas will be based on The Collections Assessment Guidelines from *The Conservation Assessment.*

During each site visit, the Consultant will use appropriate sections of the outline contained in the Collections Assessment Checklist in *The Conservation Assessment.* Time commitments by respective staff members will vary, and are reflected in the budget. The estimated time for the Consultant's pre-museum work, site visits, and meetings is as follows: one day for examination of pre-visit data and preparation for staff training; four days for site visits at the main museum building; one day for visiting Hatch Show Print, RCA Studio B, and the off-site storage facility; and one day for staff training.

PHASE TWO: ASSESSING INFORMATION, June 30-August 15, 2003

The Consultant will develop a draft survey report, which the Project Manager will circulate to team members and other appropriate CMF staff for review and comment. The Consultant may ask staff for additional information. The Consultant and CMF staff will discuss the draft report, resolve any conflicts in priorities that may emerge in the process of surveying diverse materials and debating various possible approaches to conserving them, and staff will begin to outline goals, objectives, priorities, and methodologies for a new institutional conservation/ collections management plan. The Consultant has allotted six days for Phases Two and Three.

PHASE THREE: REPORT AND RECOMMENDATIONS, August 15-September 15, 2003

The Consultant will finalize the survey report, prioritized for immediate, mid-term, and long-range implementation. This report will review CMF staff positions and duties and may make recommendations for additional staff and/ or training. The report will also recommend specific guidelines relating to the preservation of the collections. The Project Manager will lead staff in preparing a revised institutional conservation/ collections management plan based on the Consultant's final survey report. The final report and the revised plan will be reviewed and endorsed by CMF's director and submitted to the CMF board's Collections Committee. Staff will work with this committee on an ongoing basis to refine the plan and update CMF's collections management policy.

This work plan incorporates the best estimates by the Consultant and CMF staff for the time needed to complete their tasks while also executing other normal staff activities. It will also fulfill CMF's plan to finalize an updated collections management policy by the end of 2003. This period also dovetails with CMF's plans for renovation and improvement of existing storage areas at Hatch Show Print and at the off-site storage facility. Threats to objects will be minimal. There is no ongoing construction. Using standard procedures, curators will pull selected objects for examination within secure stack areas, with minimal movement.

2a. What are the proposed conservation methods and why are they conservationally sound?

This project is a survey of conservation needs and does not include the execution of recommended conservation work. The project design reflects efficient and reliable methods based on *The Conservation Assessment.* CMF staff members follow standard safety precautions in retrieving and handling materials, which are stable and pose no hazards if handled correctly.

2b. Describe your rationale for the proposed training curriculum.

Using existing equipment and supplies, the Consultant will conduct a one-day training session for Museum Services staff. With assistance from CMF curators, she will review proper handling and storage techniques, as well as environmental monitoring. These training efforts will sharpen and improve the skills of Museum Services staff, who handle materials. In addition, she will make a fifty-minute presentation to staff from other departments about the importance of collections care. This presentation will educate other divisions about the work of Museum Services staff and make the entire organization more sensitive to the needs and costs associated with maintaining CMF collections according to the highest possible standards. The Consultant has conducted more than fifty surveys over the past twenty years; almost every survey has included a training component ranging from a few hours to five days.

3. What are the objects and structures that are the focus of this project?

Covering the period 1870-present, CMF's materials document the history of country music as art and enterprise. Items are in diverse media, and all are available for research under staff supervision. Materials are housed principally at the main museum building, a newly built, 135,000-square-foot structure completed in May 2001. Designed by Nashville-based Tuck-Hinton Architects and New York-based Ralph Appelbaum and Associates in conjunction with CMF staff, the building won a *Communications Arts* Award for Excellence in Museum Design. Collections storage areas and curators are visible behind glass walls on museum gallery floors, so that visitors may grasp the importance of CMF's collections to its mission and connect collections with exhibits and public programs staged in the museum.

Virtually spanning the history of recorded sound, CMF's collection embraces 200,000 recorded cylinders and discs, including approximately 98 percent of all pre-World War II country recordings ever made. Some 28,500 78-rpm discs document the early country music industry, and, by extension, the American music industry of the period 1920-1960. In addition to commercial discs, 78-rpm holdings include some 500 radio air checks, home recordings, and demonstration recordings. CMF's recordings also embrace 14,000 twelve- and sixteen-inch transcriptions containing recorded radio shows, including more than 700 recordings of live *Grand Ole Opry* NBC network radio broadcasts (1939-1960). Long- playing albums, 45-rpm discs, and compact discs document the evolution of recording technology, and preserve the sounds of country music history from the late 1940s to the present, including the exportation of American popular culture worldwide. Many of CMF's recordings are quite rare, and original metal parts or tapes for many recordings are nonexistent or unavailable, thus heightening the importance of CMF's holdings to preserving American culture.

CMF's holdings include 5,450 audio tapes in ten-inch, seven-inch, and other smaller formats that contain syndicated country radio shows and radio specials, dubs of rare acetate recordings, and dubs of live country music shows. CMF also has nearly 1,000 tape-recorded oral history interviews with performers, songwriters, record producers, broadcasters, radio executives, booking agents, and other music industry personnel.

Presently, CMF has 8,516 films and videotapes. Films are in 16mm and 35mm formats; videotapes are in VHS, Betamax, Beta SP, and other formats, containing feature films, short films, documentaries, commercials, musical TV specials, award shows, and home movies. TV series such as Springfield, Missouri's *Jubilee U.$.A.* and Los Angeles- based *Town Hall Party* document important country music centers outside Nashville.

The costume collection of over 800 items dates from the 1920s to the present and includes Minnie Pearl's trademark hat, Hank Williams's blue-on-cream stage suit, and a dress Loretta Lynn made at age thirteen and loaned to Sissy Spacek for researching her portrayal of Lynn in the 1980 film *Coal Miner's Daughter.* As part of one key exhibit, CMF also displays a sewing machine and costume patterns used by Hollywood tailor Nudie Cohen, famous for his dazzling stage suits.

The instrument collection numbers over 600 items. Guitars, many of them rare models and prototypes, comprise half of these holdings; banjos, fiddles, steel guitars, mandolins, and folk instruments such as cigar-box fiddles make up the rest. Historic instruments include a harmonica and megaphone used by DeFord Bailey, country music's first African-American star; Sara Carter's autoharp, used at the Carter Family's first recording sessions in 1927; and Les Paul's 1941 experimental "log" electric guitar.

CMF's collections are also rich in paper-based archival materials, which comprise 170 linear feet of shelf space. Radio scripts document 1940s regional shows like Charlotte's *Dixie Jamboree,* and Knoxville, Tennessee's *Mid- Day Merry-Go-Round.* Some 22,500 posters document stage and film appearances by hundreds of local, regional, and national acts. One hundred twenty original song manuscripts include Dolly Parton's "Jolene" and Kris Kristofferson's "Help Me Make It Through the Night." Seventy-five performers' scrapbooks contain a wealth of newspaper clippings, advertisements, and other rare items. Original and microfilmed business files preserve the legacies of enterprises like Arlington, Virginia-based Connie B. Gay Enterprises, long a major force in broadcasting and talent booking, and the Acuff-Rose Artists Corporation, an important Nashville booking agency. Notebooks detail recording sessions supervised by major producers such as Columbia's Art Satherley. Recording engineer Aaron Shelton's appointment books list numerous sessions held at his Castle Recording Laboratory, Nashville's first professional independent recording studio (1946-55). CMF also archives some 1,500 record company catalogs and serves as the repository for non- current recording session contracts generated by the Nashville local of the American Federation of Musicians and is evidently the only such repository for a local musicians' union chapter.

CMF's print materials cover country and folk music and related vernacular styles such as jazz, blues, rock, and pop, while addressing related subject areas including folklore, rural American life, radio and television broadcasting, recording, music publishing, and songwriting. Some 8,000 books are complemented by almost 450 current periodical
titles, complete or partial runs of some 500 historic periodicals, catalogs of musical copyrights, approximately 2,500 clipping files on individuals and organizations, some 6,000 pieces of sheet music, and nearly 3,000 songbooks.
Some 180,000 photographic images, many garnered from private collections and as yet unpublished, cover the years since 1920. Formats include silver gelatin prints, sepia-toned and color prints, color transparencies, and both color and black-and-white negatives. Special groupings preserve the distinctive styles of enterprises like Chicago's Theatrical Studio, which made numerous photos of WLS *National Barn Dance* stars.

CMF's most renowned fine art item is Thomas Hart Benton's last mural, *The Sources of Country Music,* commissioned by CMF in 1973 and completed just before his death in 1975. CMF also owns thirty preliminary drawings and a plasticene model, comprising one of the most complete collections of studies relating to a single Benton painting. Commercial art holdings include some 300 album cover separations.

CMF has operated RCA's Studio B, Nashville's oldest surviving recording studio, since 1977. Artists such as Waylon Jennings and Chet Atkins recorded dozens of hits there between 1957 and 1977. The owners donated Studio B to CMF in 1993, along with vintage recording equipment. Since 1986, CMF has operated Hatch Show Print, a poster shop that has documented popular entertainment in the South and Midwest since the firm began in 1879; it was donated to CMF in 1992. Today, Hatch houses 550 original woodcuts (some more than 100 years old); some 20,000 posters from country music shows, minstrel shows, and films; about 2,000 photoplates, 20 linear feet of business records-including many documenting the Negro baseball teams and the black theater circuit-65,000 pieces of wood type, about 900,000 pieces of metal type, and vintage printing machinery. CMF has begun moving vintage posters (posters more than 15 years old) and original business records to the main museum. (Note: Figures for poster and business records are reflected in totals mentioned above.)

To fulfill its mission of collecting and preserving country music's history and traditions and educating is various audiences, CMF has assembled one of the world's largest and finest bodies of materials related to this important form of popular culture. CMF collects materials that support its exhibitions as well as its library, research, publications, and educational programs, including school programs and public programs aimed at children, youth, adults, and families. Besides serving the general public, CMF's collections also serve professional scholars, students, the music industry, and the media-through which CMF staff and non-staff researchers reach diverse audiences worldwide. (For further information on how CMF's collections support its mission and programs, see Country Music Foundation Mission and History Statement, in Supporting Documentation.)

As an international arts organization, CMF's collections make it a focal point for museum visitors, scholars, and media specialists from Nashville, the South, the nation, and the world. Because of its strategic location in country music's capital, CMF's collection is especially rich in local and regional history materials. For Nashville residents intrigued by their musical past and present, CMF is a gathering place where they can research the city's history; attend film series, lectures, and seminars on topics of local interest; and enjoy musical performances. Local visitors especially appreciate the achievements of area songwriters, singers,

and music enterprises like Hatch Show Print and Studio B to the city's economy, and with the deaths of many older performers and entrepreneurs, the importance of CMF as a repository of local memory is steadily increasing. In sharing that memory with others, including local business organizations such as such as the Chamber of Commerce, CMF serves as an important resource for developing cultural tourism in Nashville, as well as in Tennessee and in other cities around the nation. Moreover, as Nashville has redefined itself as a city with major cultural amenities, CMF's collection and museum facility make the organization a key player in renewing the city's downtown core. Toward this end, CMF has forged alliances with the nearby Frist Center for the Visual Arts, the main branch of the city's public library system, and the Nashville Symphony, which will soon relocate to a new building near CMF.
Sharpening staff's conservation awareness and practical skills will benefit CMF's entire collection.

4. How does the project relate to CMF's ongoing conservation activities?

This project will allow CMF to build upon its longstanding practices and recent improvements in collections care. CMF follows its written Collections Policy, which incorporates American Association of Museums (AAM) and American Library Association (ALA) standards and was approved by the board in 1992. Exhibit cases, exhibit areas, and storage areas are environmentally controlled and secure. Average temperatures in galleries, cases, and storage areas are stabilized at 68-72 degrees and humidity is stabilized at 48-52 percent. Temperature, humidity, light levels, and changes in the condition of all displayed objects are monitored daily by recording devices and physical inspection. Exhibit lighting is UV-filtered, and exhibit cases are ventilated to minimize harmful effects on artifacts. Cases are cleaned regularly, and objects are rotated to minimize exposure to light and other potentially adverse conditions. Detector-triggered alarms, sprinklers, and exhaust fans guard against fire and smoke damage.

Access to the building is carefully controlled; all staff and non-tourist visitors wear badges. Besides the facilities manager, only Museum Services and IT Services staff have personalized electronic keys allowing recorded access to collections storage areas; others must be accompanied by authorized staff. Surveillance cameras, building alarms, and case alarms are also employed. Artifacts on display are protected within locked, glass cases or by plexiglass barriers. Public areas are staffed by visitor service representatives and inspected by maintenance staff several times a day. Curatorial staff check conditions in exhibit cases on a daily basis; staff check conditions at Hatch Show Print, Studio B, and the off-site storage facility several times per week.

Objects in storage are all protected from mechanical and other types of damage. 78-rpm sound recordings are 'stored upright in locked, custom-bui1t, treated-wood cabinets. Fragile sound recordings such as glass-based acetates, home recordings, and rare 78s are transferred to the more stable medium of analog tape, and to listener-copy CDs.
Other items are stored on metal shelving in archivally sound materials; for example, paper materials are stored in acid-free folders and boxes. Periodicals are bound, or obtained on microfilm as available. Library items are non- circulating, and a reference librarian supervises their use.

Library and curatorial staff examine exhibits and collections for conservation needs on an ongoing basis. Minor repairs are made by the senior curator. CMF also employs independent consultants and conservators. A strict rotation schedule is followed. CMF's conservation practices extend to RCA Studio B and Hatch Show Print. Studio B was repaired and restored as closely as possible to its early 1960s appearance in 1996. When previous owners sold Hatch's long-time location, CMF moved the business to a CMF-owned historic building in 1992, supervised by the Metropolitan Nashville Historical Commission and by architects expert in historical preservation. A full-time curator cares for the Hatch collections, including machinery, wood blocks, and type. Museum Services staff care for vintage posters and business records. The Hatch building meets all local codes and was fully rewired in 1991. Special storage cabinets house paint and thinner; fire extinguishers are kept at hand and tested twice a year. As with Studio B and the off-site storage facility, temperature and humidity are controlled, and ADT Security Systems monitors fire and burglar alarms, which are also linked to the local fire and police departments.

With the 2001 move to the new museum facility, CMF made great strides in storage of its collections. Storage space was made more efficient by using compact shelving units, and many items that could not fit on shelves in the original facility now have the necessary space. Environmental conditions were greatly improved with a museum-wide air filtration system, and it became much easier to maintain proper humidity and temperature ranges. Security was greatly enhanced by limiting access to collections to key personnel who use electronic keys.

CMF has also reduced handling of collections by means of digital access catalogs that allow staff to go directly to items on the shelves. Electronic databases serve as full catalogs or finding aids for 75 percent of film and video holdings, 60 percent of recordings, 60 percent of oral history interviews, and 95 percent of books. With assistance from a $100,000 Organizational Capacity grant from NEA (awarded in 2001), CMF has engaged Elephant Ear, an interactive design studio that specializes in asset databases, to create a single-platform collections database that will incorporate multiple collections and formats and provide the basis for any future on-line catalogs used by library patrons, those who use CMF's Web site, museum visitors, or museum staff.

CMF is committed to digitizing as much of its collection as possible. Supported by a grant from the David and Lucille Packard Foundation, CMF began its digitizing program with recordings, still images, and moving images used for new museum exhibits. A $214,000 NEH Preservation and Access grant, awarded in 2001, is enabling CMF to

transcribe 60 percent of oral history interviews in digital form, and to re-record them in analog and digital formats. CMF has also applied to the NARAS Foundation for financial support to begin digitizing its 78-rpm recordings. Presently, photos are being digitized as they are used for CMF projects including exhibits, publications, and reissue recordings, and as they are duplicated for use by outside researchers.

CMF's ten-year plan, approved by the CMF Board on January 10, 2002, identifies conserving, enlarging, and improving access to CMF collections as one of seven major goals. The first major objective is to conduct a conservation survey at the earliest opportunity. This includes review and revision of CMF's collections management policy, along with reviewing staffing, training, storage environments, and exhibition conditions. The general survey will provide the essential first step toward a new comprehensive collections management plan that will identify and prioritize environmental improvements, repair and maintenance of collections, and key materials to be sought for acquisition. CMF has begun to identify prospective members of a standing Collections Committee that will include board members and diverse community leaders. This committee will assist staff in revising collections management policy, adjusting and monitoring the collections management plan. The committee will also assist staff in identifying gaps in the collection and in making connections with diverse constituencies who can help staff fill those gaps. This committee will be formed no later than the end of 2002.

Previous IMLS grants (for general operating support) have helped CMF maintain staffing levels and implement training programs for staff visitor service representatives, especially at RCA Studio B.

Now that CMF has operated in its new facility for some fifteen months, the time is ripe for a systematic review of collections management policy. A long-range plan for phased implementation of a conservation consultant's recommendations will provide a solid platform for making collections needs an essential consideration in future allocations of staffing, staff time, space, and financial resources to conservation, exhibits, and fundraising.

CMF's annual budget includes line items for archival storage materials as well as funds for consultation and work by outside conservators. Expenditures for exhibit and collections repair and maintenance were $10,000 in 2001, in addition to $50,000 earmarked for conservation in the (capitalized) exhibit budget for the new museum, spent mostly in 2001. $58,400 was allocated for conservation in 2002; $50,000 is allocated for 2003.

5. What are the anticipated benefits of this project?

The survey will allow CMF to develop, budget, and support a comprehensive, phased, conservation program as a key element of an institutional collections management plan so that resources can be allocated efficiently. Conservation needs will be more easily considered in future acquisitions of material, and in planned improvements to spaces at Hatch Show Print and the off-site storage facility. The survey will identify and prioritize specific conservation needs and allow CMF to target future grant requests to appropriate funding sources, including individual and corporate sponsors. The survey will also help CMF develop appropriate five-year plans for exhibitions and associated public programs, based upon a long-range program of conservation work. Because CMF's collections are essential to all CMF exhibition, research, library, publications, and educational programs, all CMF audiences will be served by this project. CMF's artifact handling spaces are visible to the public, offering rare opportunities for the public to view the care of archival collections. Accredited by the AAM in 1987 "with highest praise," CMF has long been a leader in the museum field, and other institutions will look to CMF to share insights gained from the project.

A summary of the survey and the resulting conservation plan will be distributed to all CMF staff and board members; these documents will also be posted on CMF's Web site to publicize further CMF's collections, make the public aware of their value as cultural resources, and encourage similar efforts by other organizations. Plans are being made for various 2003 exhibits and programs that will highlight CMF's holdings. Publicizing the survey and plan in various media will be a natural part of this deliberate emphasis on CMF's collections and its role in preserving them.

6. How will the applicant ensure that ongoing museum functions are not inhibited by the project activities?

The Consultant will work with CMF staff at cautiously determined intervals to ensure that staff can fulfill ongoing, day-to-day duties. It should be noted that inspection of materials is a part of curators' duties, and that developing a comprehensive conservation and collections management plan is designated as a principal activity for the coming year. Because museum galleries do not open until 10 am, inspection of exhibits can take place before that time. The survey work in visible storage areas will actually enhance the museum visitor's experience by heightening awareness of the collection's importance and providing a behind-the-scenes look at the CMF's conservation activities.

7. How does the project budget support the project goals and objectives?

The project budget was developed by CMF staff in consultation with the Consultant. Projected costs are based on the Consultant's daily rate, which is within the range of daily rates charged by professionals of similar expertise and experience.

8. What are the qualifications and responsibilities of the project personnel?

The survey will be conducted by Christine Young, an M. S. in art conservation with additional specialties in paper and photograph conservation. Ms. Young has more than twenty-five years experience gained at institutions including the Indiana Historical Society and the Nelson-Atkins Museum of Art in Kansas City, Missouri, as well as in private practice. She has previously assisted CMF in conservation work. She will work with CMF staff to describe conditions and needs in various segments of the collection, prepare the final report, assist staff in identifying goals for a long-range conservation plan, and conduct limited training sessions to cross-train staff.

Lauren Bufferd, vice president for museum services as of November 1, 2002, will serve as Project Manager, scheduling and overseeing Ms. Young's work with other staff. After completing her Master's degree in Library Science, she developed an important theater archive at the Chicago Public Library. She will also work with Ms. Young to survey manuscript materials and other paper items. Other CMF staff will serve as principal members of the survey team, assisting Ms. Young in assessing components of the collection for which they are responsible:

Senior Curator of Collections Mark Medley oversees CMF's collections of costumes, instruments, and other three-dimensional artifacts. He holds a Master's degree in Public History and Historic Preservation from Middle Tennessee State University, and was instrumental in curating and installing items in the new museum facility.

Audio-Video Curator Alan Stoker studied commercial music at George Peabody College, 1973-1975 and completed a special course in audio preservation technology at the Peabody Conservatory of Music, Baltimore, Maryland, in 1991. His twenty-two years of experience as an expert audio restoration engineer have included several Grammy-nominated albums and one Grammy-winning boxed set, *The Complete Hank Williams* (Mercury, 1998).

Photo Curator Denny Adcock received his B. A. in Mass Communications from Middle Tennessee State University and earned a certificate in Archival Management and Preservation of Photographic Images from George Eastman House/Rochester Institute of Technology .Prior to joining CMF, Mr. Adcock worked in various curatorial capacities in the Special Collections Department of the Vanderbilt University Library, and Lifeway Christian Resources, where he cataloged and indexed an 80,000-image photographic archive.

John Rumble, Senior Historian, holds a Ph. D. in History from Vanderbilt University. A twenty-year CMF employee, he supervises CMF's oral history program in addition to fulfilling other collecting duties and various research and writing assignments for exhibits, publications, reissue recordings, and broadcast productions.

Rebecca Miley, Assistant Librarian, holds a Master's degree in Library Science from George Peabody College of Vanderbilt University and has worked with CMF's serials and record collection since 1981.

Dawn Oberg, CMF's Reference Librarian, holds a B. A. in Music Synthesis from the Berklee College of Music. She studied Library and Information Science at the University of Texas at Austin and has extensive experience as a corporate librarian.

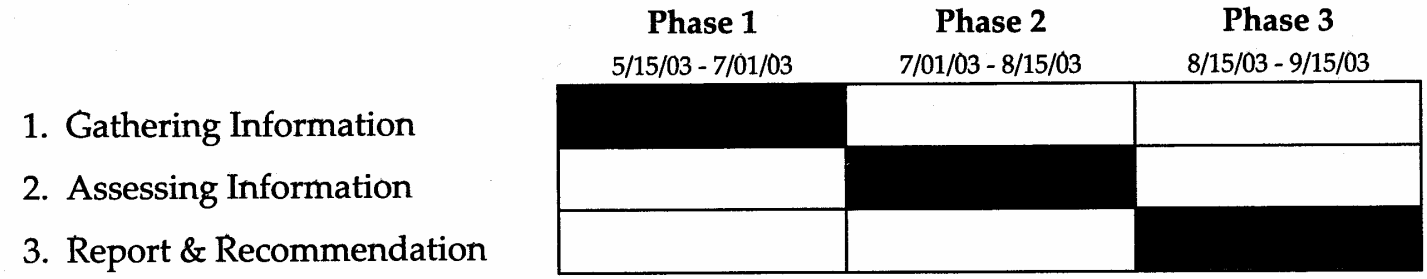
Annie Freeman joined CMF in 2001 as Preparator. She received her B. F. A. from the Kansas City Art Institute and has extensive experience as an artist and artist-in-residence, as well as in and theater costume and set design and construction. She assists Mr. Medley in caring for costumes and oversees the mounting of items for display.

Carolyn Tate, Director of Exhibits and Production, holds a B. S. in English Language Arts from George Peabody College of Vanderbilt University and rejoined CMF in 2002. She is responsible for scheduling, planning, installing, and maintaining exhibits. She previously worked for CMF as production editor, then acquired extensive experience as director of museum services for Nashville-based 1220 Exhibits and as a member of the museum services department of Looney Ricks Kiss Architects.

Hatch Show Print manager Jim Sherraden holds a B. A. in English from Middle Tennessee State University and has won widespread recognition for his original poster designs. He has run the Hatch operation for almost 20 years and frequently makes presentations to graphic design students and professionals.

For additional information on major team members, please see staff resumes in Supporting Documents.

COUNTRY MUSIC FOUNDATION GENERAL CONSERVATION SURVEY
SCHEDULE OF COMPLETION



Henry Ford Museum & Greenfield Village

Dearbom, Michigan

Project Type: Detailed Survey
IMLS Award: $50,000
Match: $67,485
Total Project: $117,485
Museum Budget: $45,659,000

HENRY FORD MUSEUM & GREENFIELD VILLAGE

1. What is the design of the project?

Within Henry Ford Museum & Greenfield Village's (the Museum) collection of over 360,000 film-based photonegatives are several collections that include fire-damaged negatives and/or high percentages of nitrate- based negatives that place the entire photographic collection in jeopardy. Burned in a fire in the Museum in 1972, this collection includes large numbers of badly deteriorated and unstable negatives, stored in brittle and scorched Kraft-paper envelopes. A mixture of nitrate and acetate-based negatives, they emit nitric and acetic acid gases that accelerate their own deterioration as well as other negatives and archival material in the vicinity. They also pose a health hazard to Museum staff and volunteers who work in the stacks where they are housed. Finally, they are a serious fire hazard. Spontaneous combustion of deteriorated nitrate film can occur at temperatures as low as 106 degrees Fahrenheit, and the gas released during a nitrate fire can be lethal as well as flammable. In January 2002, the Museum completed a new storage facility that includes specialized cool storage for film collections and an independent ventilation system that maintains low temperature and humidity levels (So deg.F/35%) (see Supporting Document 5A). However, even with an appropriate storage facility, the fire-damaged, deteriorated and nitrate-based film negatives stored together in brittle, acidic enclosures puts the entire collection at risk.

The Museum has had two IMLS-funded projects (IC-80005-98 & IC-10064-01) to work on these collections and expects to have assessed and re-housed 57,000 fire-damaged nitrate- and acetate-film-based photonegatives by September 2003 (see Supporting Document 3A). This proposal seeks funding to continue this work- to complete the survey and rehouse the remaining 12,300 photonegatives in Accession 64.167.833, the "Henry Ford/Ford Motor Company Photograph Collection" (hereinafter Accession 833), and then to work oh the 15,400 negatives in Accession 64.167.189 "Ford Motor Company Engineering Photograph Collections" (hereinafter Accession 189). According to the general survey, Accession 189 has a high percentage (over 45%) of nitrate-based negatives that represent a serious fire risk if they deteriorate. The project objectives are to:

1. Survey and assess the film negative condition and determine film type.
2. Separate badly deteriorated film-negatives from minimally or non-deteriorated negatives. 3. Separate nitrate-based film negatives from acetate-based film negatives.
4. Capture all historical information related to the negatives from vintage enclosures.
5. Re-house minimally deteriorated or non-deteriorated negatives in archival or microchamber enclosures, as appropriate.
6. Isolate negatives in advanced stages of deterioration from the rest of the collection.

Each negative's condition will be assessed, using established standards of stages of deterioration. Stage 1 is the least deteriorated, stage 5 is the most (see Supporting Document 5B). Based on the condition assessment, negatives will be recommended for re-housing or separation from the collection.

- Negatives exhibiting no deterioration will be housed in new xerographically-copied (photocopied) archival enclosures and returned to the archival collection. (Estimated 3% of the collection, based on the experience of the current project.)
- Negatives exhibiting stages 1-2 levels of deterioration will be returned to the collection to await future refonnatting. The vintage negative enclosure will be photocopied onto a new archival enclosure to which the negative will be transferred. This ensures that all identification and historical information on the vintage negative envelope is transferred to the new enclosure. (Estimated 62% of the collection.)
- Negatives displaying levels 3-5 stages of deterioration will be removed from the archival collection to a separate location for later evaluation. (Estimated 35% of the collection.)

Separation of nitrate negatives from acetate negatives is imperative. Separating nitrate negatives from the acetate negatives will allow the nitrate negatives to be stored separately with appropriate temperature and humidity levels. Furthermore, the disposal process for nitrate negatives requires more stringent environmental and safety precautions than that for acetate film-base negatives. (Deaccession and disposal of negatives is not part of this project. However, the curator of photography will review negatives in deterioration stages 3 to S for possible deaccession and disposal.) Film base type will be determined by using manufacturer edge stamp, historical data, manufacturer notch codes, cross polarization, and/or chemical float test.

The vintage enclosures that currently house these negatives contain important historical information. Photocopying the information on the vintage enclosure onto the new enclosure can capture this information Efficiently and effectively. Microchamber enclosures will be used on a case-by-case basis, depending on the condition and historical significance of the negative.

Due to the decomposition of the film negatives, processing this collection will occur in a ventilated work area with a fume hood. The lab has had an air quality test for volatile organic compounds. The test was conducted over a period of four days in a variety of working conditions using an ECO Sensors VOC Gas Sensor Model C-21. An Industrial Hygiene Consultant (BDN) has reviewed the lab set up and procedures. In all cases, the air quality remained within the safe range. Each project staff member has been fitted with a personal respirator. In addition the Museum has installed two flexible fume extractors for better ventilation and the lab is equipped with a fire protection system. All project staff members have received safety training.

Experiences gained from the previous IMLS-funded projects provide us with a strong understanding of the resource needs for this work (see Supporting Document 3A). Based on this experience, two part-time project assistants can process about 3,640 negatives per three-month period, with the exception of the first three months when the rate is lower due to training. The previous projects also confirmed that, although all the fire-damaged negatives have been stored separately, the condition of individual negatives varies tremendously, even within the same storage envelope. Currently, the burned photonegatives from Accession 833 are housed in metal filing cabinet drawers and are improperly stored as groups within single vintage enclosures. Many are overcrowded. The photonegatives in Accession 189 are housed in acidic boxes and, like Accession 833 negatives, are improperly stored as groups within single vintage enclosures. We recommend rehousing the negatives because the time that would be involved in separating negatives by condition would take almost as much time as the rehousing process involved in this project. The negatives will be selected in the chronological order in which they appear in the file cabinets, beginning with the oldest negatives. Based on these studies, the 27,700 negatives in the project will require:

- Two project assistants (100% = 24 hours/week for a total of 1,200 hours/year for each assistant) to undertake the daily tasks of negative identification, condition assessment, separation, and rehousing. The assistants will be aided as required by volunteers in basic tasks such as photocopying enclosures.
- The sul2ervising conservator on this project will be Minoo Larson, senior paper conservator. She will train and oversee the project assistants (40% = 16 hours/week for the first 4 weeks; 20%= 8 hours/week for the remainder of the project).
- The curator ofl2hotogral2hy, Cynthia Read-Miller, has responsibility for the Museum's photographic collections. She will provide project supervision in the areas of photoprint research and archival practice (25% = 10 hours/week for the first 4 weeks; 15% = 6 hours/week for the remainder of the project).
- The 12roiect administrators. Mary Fahey, will oversee departmental and personnel issues for the project. Fahey is the Museum's Chief Conservator. Jim McCabe will oversee the financial and budgetary detail with the project. McCabe is the Museum's Chief Collections Manager (each 2.5% = 1 hour/week for duration of the project)
- The documentation technician will be responsible for entering survey data into the Museum computerized collections management system, Questor Systems' ARGUS OE. (8 hours/week for the duration of the project.
- The 12hotogral2hic conservator, James M. Reilly, Director, Image Permanence Institute, will provide assistance via correspondence and telephone. Total consultation time is estimated at 8 hours over the course of the project.

2. What are the proposed conservation methods and why are they conservation ally sound?
The general methods used in this project were developed from the recommendations of IMS-funded consultant Lois Olcott Price, and represent the best possible approach to a collection of this size and condition. The success of this project depends on a methodology that will insure that the negatives are processed in a reliable and efficient manner. The 1995 condition survey, the 1997 pilot project, and the two current IMLS-funded projects have provided a solid basis upon which to develop a procedure for working with these materials that is efficient, reliable and reflects currently accepted conservation techniques. Consultant James M. Reilly will insure that the project follows current practice and will be available to deal with unexpected conditions or problematic negatives.

The workflow of this project has been carefully designed to be as efficient as possible. Because of the large number of items in the project, small improvements in process result in big gains in efficiency. As part of the effort to make the process efficient, procedures are in place to limit handling of materials. Consequently, the condition assessment, sorting by film type, and re-housing will be part of a single process. This also benefits the objects themselves because potential for handling-induced damage is reduced. Reliability is also improved because all processing is completed in a short time period.

The project design has drawn heavily from current literature and expertise in dealing with film negative collections (see Supporting Document 5C). The system for categorizing stages of deterioration is standard in the profession. Nitrate and acetate film-base negatives can be accurately and efficiently identified by a number of methods. Five methods that will be used for this project will be identification by manufacturer edge stamp, comparison of historical data to a date chart, comparison of manufacturer notch codes to a code chart, cross-polarization, and chemical float test.

Microchamber enclosures will be used for selected negatives based on historical significance and condition. Although a relatively new and more expensive archival paper technology, the microchamber enclosure can protect the negative from potentially harmful gasses by trapping them within the paper. Buffered enclosures lose their effectiveness over time and would have to be replaced in the future.

3. What is the object(s), historic structure(s) or specimen(s) that is the focus of this project?
There are 12,300 photonegatives remaining to be evaluated from Accession 833, "Henry Ford/Ford Motor Company Photograph Collection," which contains a total of 69,300 photonegatives. Ford Motor Company photographers made these photographs between 1903 and 1950. This collection is important both for its content and completeness: it is the first and longest continuous collection within the Henry Ford/Ford Motor Company archival photographic collections. The negative recording system developed by Ford Motor Company for this group continues in use today. The images recorded on the negatives are the core of the visual history of the first half-century of Ford Motor Company, and are the core of the photographic collections of Henry Ford Museum & Greenfield Village.

The remaining negatives are part of Accession 189 [64.167 .189], "Ford Motor Company Engineering Photograph Collection" that contains a total of 15,400 film photonegatives. Ford Motor Company photographers made these photographs between 1918 and 1954. As the work of the second Ford photographic department, this collection is important because it documents product engineering, and design and plant manufacturing activities not recorded by the main Ford photographic department represented in Accession 833. During this time (1918-1954) the company expanded beyond automotive manufacturing. This collection includes design and production images of farm tractors and tri-motor airplanes, as well as automotive vehicles. In addition, the collection includes copy negatives use9 in publishing the company magazine, Ford News -among them the famous Rouge Plant photographs made by Charles Sheeler in 1927 and copied by the Ford photographers in 1929.

Like Accession 833, Accession 189, "Ford Motor Company Engineering Photograph Collection," is a valuable resource for the Museum, as well as the broader research and publishing communities. It is a unique and irreplaceable source of visual information about the product development activities of the Ford Motor Company during the time when the company was expanding globally, as well as many aspects of mid twentieth-century U .S. technological history. Throughout the Museum, photographs from the archival collections support our mission to provide unique educational

experiences based on authentic objects from America's traditions of innovation, resourcefulness and ingenuity. The photographs provide illustration and background information for exhibitions and programs enjoyed by more than 1.5 million Museum visitors each year. These resources were used most recently in the Museum's exhibitions, Ford Stories: Journey to the Model T [opening June 2003], Heroes of the Sky [opening September 2003], Automobile in American Life, Made in America, and Henry's Story, the Making of an Innovator. Electronic programming, a key element in the Museum's strategic plan, also uses the photographic collections extensively to provide unique educational interactions for students, teachers, and general audiences beyond the Museum's boundaries. In addition, the Research Center's 1,600 annual research visitors often refer to the photographic collections in their studies. The research staff use photographs to supply answers to many of the 1,900 public information requests received by mail and electronic mail annually (many of these images can be seen at our web site, www.hfmrrv.org). At a time in which visual literacy is becoming increasingly important to the Museum's educational programs and ,visual information is becoming increasingly accessible through new electronic technologies, it is vital that this resource is preserved for future users.

4. How does the project relate to your museum's ongoing conservation activities?
Because of the size and complexity of the Museum's collections, improving environmental conditions has been at the center of institutional conservation activities for the past 15 years. Environmental improvement is a key objective in the institutional strategic plan for conservation (see Supporting Document 4A). These efforts have included improvements to the overall collection environments, such as a $15 million project to control the climate in the Museum, and a new $17 million Research Center and collection storage facility (completed January 2002), both initiated through a $40 million capital campaign. Preventative conservation measures have improved the micro environments that surround the individual artifacts. Such measures include numerous storage re-housing efforts and new and expanded collections care routines that reduce damage to collections from light, dirt, pests, storage materials, etc. Improving the micro environments of the film negatives by surveying and re-housing the collection is a major element of the environmental improvement strategy of the Museum.

The Museum has long been concerned about housing the 360,000 nitrate- and acetate-based negatives and minimizing the deleterious effects of the by-products produced by their deterioration. For many years, the immense scale of the task has thwarted most efforts to address it. Following the recommendations of an IMLS-funded consultation in 1990 with Lois Olcott Price, (then senior conservator at the Conservation Center for Art and Historical Artifacts), a program for addressing the collections was developed (see Supporting Document 3B) by the Museum's paper conservator, Minoo Larson. In 1995, Larson, working with Museum curator of photography Cynthia Read-Miller, directed conservation intern Thomas Primeau who conducted a general condition assessment (see Supporting Document 3C, pp. 8-9). That assessment was critical in identifying Accession 833 as the highest priority among the sixteen different photo accessions arid provided a better estimate of the actual size of the collection. In 1997, Larson and Read-Miller led a pilot project by conservation interns Nan Curtis and Anna Pegler Gordon (see Supporting Document 3D) that revealed more about the range of deterioration among the negatives. The project also helped us understand in detail the steps involved in the process, the most efficient way to carry them out, and the resources required to do the work. In 1998, IMLS funded the first assessment and re-housing project to process a total of 29,808 negatives (see Supporting Document 3A). The current project, led by Larson and Read-Miller, is expected to survey and rehouse an additional 27,700 negative in Accession 833 when complete by September I, 2003.

In the short-term, this project will continue the progress to significantly improve microenvironmental conditions of the photographic collections by rehousing or removing the most deteriorated negatives from general archival storage to another location. Accession 833 is by far the most chemically unstable accession in the Museum's photo collections and Accession 189 has the largest concentration of nitrate-based negatives. The removal of unstable film negatives will reduce the presence of dangerous gases emitted by these negatives, improving the environmental conditions and reducing the rate of deterioration for the remaining negatives. Such environmental improvement will also reduce possible health hazards for staff working in the archival storage area.

In the long term, negatives separated by type and condition will facilitate improved management of the collection, since it will be possible to store the collection based on material needs. The project will also provide the operational basis to

survey and rehouse the balance of the 360,000 negatives. Finally, this project is also being proposed as one element of a long-term plan to improve environmental and storage conditions throughout the archival storage area. This plan also includes the new zoned storage facility, completed in January 2002, which now provides for lower temperature (50 deg. F) and relative humidity levels (35%) for photographic film materials

Henry Ford Museum & Greenfield Village has been the recipient of six IMS/IMLS Conservation Project grant awards in the last 15 years. In 1988, IMS funding supported the installation of an environmental monitoring system in Henry Ford Museum. The information collected by that system played a major role in the design of the new $15 million climate control system in the Museum. In 1990, IMS funding supported a general conservation survey (see Supporting Document 3E), which brought six consulting conservators to the Museum. They agreed that the Museum's collections care priority should be environmental control: their recommendations formed the basis of the Museum's long-range preservation plan. Lois Price, the conservator surveying the former Research Center's storage facilities and paper collections, identified the primary conservation concern in this area (after general environmental improvements) as the appropriate management of nitrate and acetate photonegatives (see Supporting Document 3B). When complete the 1998 & 2001 Conservation Project awards will have supported the assessment and rehousing of the first 57,000 of these photonegatives.

The implementation of the recommendations from IMS-funded and other surveys and reviews has led to major improvements. The American Association of Museum's 1996 accreditation team, in recommending full accreditation, praised the Museum for its demonstrated progress in improving its programs, collections storage, finance, and operations, noting that the Museum "has made tremendous strides in collections care, improvement of its physical facilities and is truly a national leader in innovative exhibitions and programming for audiences of all kinds." Further, the Museum has "done an extraordinary amount of work in applying current professional standards to what is, besides the national collections held by the Smithsonian Institution, perhaps the largest collection of historical objects in the United States."

5. What are the anticipated benefits of this project?

The organization by film type, re-housing selected negatives into archival enclosures and separating deteriorated negatives from the archival collection will reduce the rate of deterioration in non-degraded negatives. It will also prevent damage from off gassing to other archival collection materials. Moreover, health and safety hazards to staff and volunteers will be greatly reduced. Finally, these survey and rehousing efforts will also make it possible to undertake a future reformatting program for those negatives with useable images, thus improving access to this important collection. As each negative is assessed, a permanent record of its composition and condition will be created that can be used for future archival purposes. Information regarding not only its physical condition, but also the photographer's notations present on the vintage enclosure, will be recorded on a negative assessment form.

These forms can be used later to update the on-line collections management system (see Supporting Documentation 5D).

6. How will the applicant ensure that museum functions are not inhibited by these activities?

A significant number of Museum staff, volunteers, and members of the public use the Museum's photographic collections on a daily basis. Although most research requests are handled through the Museum 's computer catalog or photoprint collection, this project has been designed to ensure continued access at current levels. Project assistants will evaluate small groups of negatives for short periods of time. Project assistants will only remove two file drawers of negatives at a time, so almost complete access to the collection will be maintained throughout the course of the project. In addition, project assistants will use outslips (following archival practice and Research Center policy) to allow other staff to locate negatives in the rehousing process.

Since this project is part of the long-range preservation plan, the supervising conservator and curator have scheduled it to minimize the disruption of other conservation and curatorial activities. The appointment of new project assistants will also enable conservation and Research Center staff not working on the project to fulfill their existing responsibilities without interruption.

7. How does the project budget support the project goals and objectives?
The project budget is built around the experience of the current project. In that project, two project assistants have been able to process 3,640 negatives per quarter. With the first quarter spent on training, this should allow the project to complete the 27,700 negatives in Accessions 833 and 189. After the first IMLS project, a change was made to the budget to increase the wage rate of the project assistants, which makes it easier to hire and keep people in these jobs, which are both physically and mentally challenging. The wage increase has been maintained for this project. This represents most of the IMLS support of this project. The balance of the project, supervisory time, object condition photography, grant administration, benefits, supplies, proper work spaces and overhead cost will come from existing Museum staff, budgets, and facilities.

8. What are the qualifications of the project personnel?
Minoo M. Larson, senior paper conservator, has been responsible for the paper, textile, and archival collections for the Museum since 1988. She supervised all pilot projects and grant projects dealing with the film negative collections. She apprenticed with James Craven, at the Bentley Library at the University of Michigan from 1983 to 1987. She was a curator at the Azarbyjan Museum in Tabriz, Iran from 1975 to 1978. She received an MA in Museum and Archives Management from Bowling Green State University, Bowling Green, Ohio in 1982.

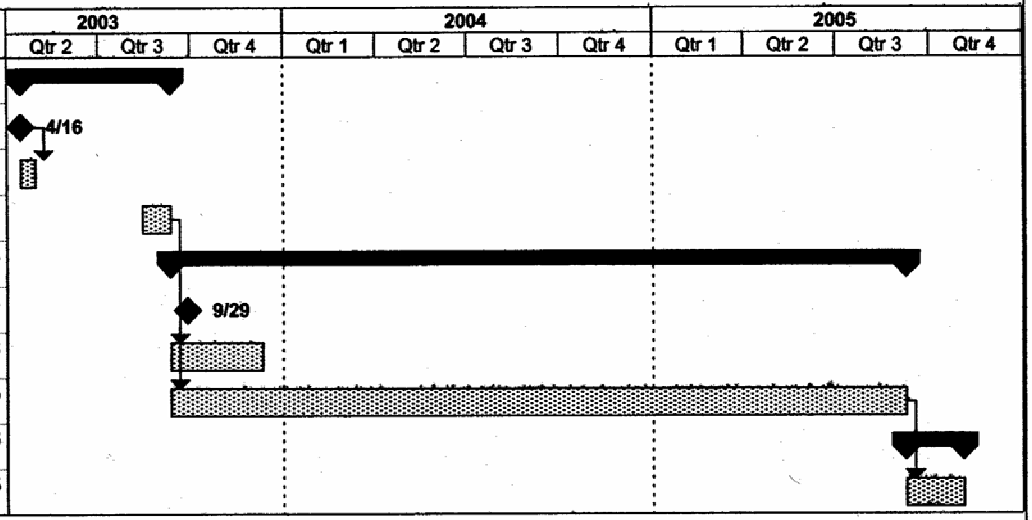
Cynthia Read-Miller, curator of photography, has been responsible for special collections, including photographs and motion pictures at the Museum since 1981. She began her work at the Museum in 1976 as an Assistant Librarian. She has had a major role in a variety of efforts to improve access to the photograph collections including project director in a 1986 NEH-funded project to provide a computerized direct visual access system for selected Henry Ford/Ford Motor Company images. She received an MA from the Graduate Library School at the University of Chicago in 1980, is a Certified Archivist and has completed the course work for an MA in American History at the University of Detroit-Mercy.

James Reilly has been the director of the Image Permanence Institute at the Rochester Institute of Technology since 1986. IPI is a research and teaching organization devoted to the stability and preservation of imaging media.

Mary Fahey, chief conservator and head of preservation management, oversees all collections preservation and conservation activities. She attended the Getty Conservation Institute program on Museum Environments in 1994. She received her MS in Conservation from SUNY -Buffalo in 1989. Jim McCabe, chief collections manager and head of collections resources, oversees all collections management and information activities, as well as all collections-related grant funded projects. He was the NEH Project Director for the environmental improvements to Henry Ford Museum. He received his MA in History Museum Studies from the Cooperstown Graduate Program in 1986.

Henry Ford Museum & Greenfield Village Film Negative Project

ID	Task Name	Start	Finish
1	**Pre-Project Activities**	**Wed 4/16/03**	**Thu 9/11/03**
2	IMLS Award Notification	Wed 4/16/03	Wed 4/16/03
3	HFMGV Budget Planning	Wed 4/16/03	Tue 4/29/03
4	Hire Project Assistants	Fri 8/15/03	Thu 9/11/03
5	**IMLS Project Activities**	**Fri 9/12/03**	**Thu 9/8/05**
6	Grant Begins	Mon 9/29/03	Mon 9/29/03
7	Training & Orientation	Fri 9/12/03	Thu 12/11/03
8	Film Negative survey & rehousing	Fri 9/12/03	Thu 9/8/05
9	**Post Project Activities**	**Fri 9/9/05**	**Thu 11/3/05**
10	Final Report	Fri 9/9/05	Thu 11/3/05



Project: Henry ford Museum & Greenf
Date: Wed 10/9/02

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

University of New Mexico Art Museum

Albuquerque, New Mexico

Project Type: Detailed Survey
IMLS Award: $16,640
Match: $16,648
Total Project: $33,288
Museum Budget: $419,665

1. What is the design of the project?

The University of New Mexico Art Museum (UAM) requests IMLS support to carry out an on-site detailed condition survey of its painting collections, to be performed by the Balboa Art Conservation Center (BACC) in coordination with UAM. The project focuses on gathering condition information essential to preservation planning within the Museum. The survey will identify the condition of each painting using a checklist "triage" form. A priority ranking will be included, identifying the urgency of attention and the extent of treatment needed for stabilization and/or aesthetic improvement. At the close of the survey project, time is allowed to augment the project in two ways. First, a limited number of more thorough examinations will be made, generating treatment proposals with cost estimates. Second, minor stabilization treatments, such as consolidation, will be performed on certain paintings known to require no additional conservation efforts. The information gained through the survey will be used in future projects aimed at improving the long-term stability of these works.

The project comprises three phases: planning and preparation; information gathering through on-site assessment; and final report including interpretation.

Phase 1: Plannina and preparation

UAM will generate location information and checklist forms for each painting, according to BACC's design format (attached). These forms will include identifying information for each object (Accession Number, Artist, and Title), as well as summary condition information where it exists in the records. A schedule of work will be determined, within the parameters of the grant period. The survey is expected to require two conservators working on-site for two weeks. A contract with BACC will be drawn up; University of New Mexico (UNM) purchasing paperwork must be issued before the project can begin. UAM's Conservator will act as Project Coordinator and facilitate communication and planning between the UAM staff and consulting BACC personnel.

Phase 2: On-site conservation assessment

Two BACC conservators of paintings will perform the assessment on-site in the Museum's painting storage vaults. They estimate spending an average of ten to fifteen minutes on each artwork, in which time the checklist form will be completed identifying current condition, severity of damage, immediacy of conservation needs, and suggestions for framing improvements. UAM staff members involved with the project will be scheduled to assist the BACC conservators, pulling and replacing the paintings, providing any additional information as needed, and facilitating the process in order that the survey will proceed as efficiently and cost-effectively as possible.

During the course of the project, 5-10 paintings will be selected in consultation with UAM curatorial staff for more detailed reports, requiring approximately 1 hour each. These reports will be completed after the completion of checklist reports for the paintings to be surveyed. The more detailed reports will include treatment proposals with cost estimates which may be used in planning for subsequent treatment projects.

UAM staff has identified a few paintings within the collection with small areas of active flaking of the paint layers. These paintings would benefit from minor treatments to stabilize these areas, but otherwise might not warrant shipping offsite to a paintings conservator for treatment. Therefore, the proposal has been designed to include time at the end of the project for the paintings conservators to perform such minor stabilization treatments. These steps will be performed in UAM's conservation laboratory using supplies and equipment already on hand.

The survey will include identification or verification of each painting's construction as well as condition assessment of each painting's support, ground, paint layer(s), surface coating(s), and frame. Each painting will be assigned a treatment priority 1-5: 1 = Urgent, 2 = Unstable for exhibit, 3 = Unstable for travel, 4 = Eventual treatment needed, 5 = No treatment necessary. In addition, any needed treatment will be identified as either Major Structural, Major Aesthetic, Minimal Structural, Minimal Aesthetic, Remedial, Framing Modifications/Treatment, or Rehousing needed. These treatment priorities are compatible with similar rankings for the paper and photograph collections currently used by UAM.

UAM will provide the BACC conservators with examination tables and appropriate lighting; these are existing equipment that can be deployed for this project without jeopardizing other ongoing activities at the Museum. More thorough examinations of a few paintings will be done in the Museum's paper and photographs conservation laboratory, where a stereomicroscope, solvents, and other equipment will be made available to the visiting paintings conservators.

Phase 3: Report and interpretation

UAM will retain the checklist forms and incorporate the conservation priority numbers and treatment rankings into the existing object files and database records. This reporting structure is parallel with the Museum's management of survey information for its other collections. The system includes detailed forms maintained by the Conservation Lab in addition to more succinct statements of condition and treatment included in the Object Files maintained by the Collection Manager. The Museum's database includes fields specific to "Treatment Priority," .'Condition Summary," and "Treatment Performed." Thus the paintings survey documentation will fit well within. UAM's existing procedures and will be easily integrated into similar information gathered for the other parts of the collection, facilitating the overall planning process.

Once the survey information has been entered into the database, UAM's Conservator will analyze the information and prepare a report quantifying the total number of paintings needing treatment, as well as totals falling under each treatment priority (1-5). Meanwhile, BACC will prepare a summary report outlining the paintings conservators' overall observations and recommendations.

The UAM project team (led by the Museum Conservator, also including the Director, Collections Manager, and Conservation Assistant) will review these reports, discuss treatment priorities and other recommendations, and request any necessary

clarifications. The final report will be used to evaluate and prioritize conservation funding needs for the paintings collection. Recommendations will be incorporated into UAM's long-range plan in regard to seeking funding, staff work goals and objectives, and allocation of existing operating budget funds. This will provide a foundation for the Museum administration's efforts to acquire University and outside funding in support of this collection, an important educational resource in the region.

2. What are the proposed conservation methods and why are they conservationally sound?

The project is designed to follow standard procedures for condition assessments and to fit within the Museum's ongoing preservation planning. The conservators chosen have extensive professional training and experience. They have conducted a number of similar surveys, including projects at the Arizona State University Art Museum and at the Laguna Art Museum. BACC's efficient "triage" form is designed to be of maximum value for the collecting institution while requiring minimal time expended on each examination. The work is planned in such a way as to reduce any danger that the paintings might be damaged in the course of examination. Each painting will undergo visual examination without being moved from its storage area. Additional lighting and other equipment will be placed with care under staff supervision, and removed when no longer needed. The paintings vaults have recently been redesigned and improvements made in the storage furniture and organization of the collection materials; therefore the survey work is expected to proceed with maximum efficiency and safety.

3. What are the objects that are the focus of the project?

UAM's collection of paintings number just over 600 works. Approximately 85% are oils on canvas or panel, while 10% are acrylics and 5% mixed media. The survey will focus on 450-500 of the works, to be selected in the planning process. Less emphasis will be placed on recent acquisitions of contemporary work in good condition (which number over 100), although these will also be examined if time allows.

Founded in 1963, UAM began with an emphasis on its collection of paintings. Important gifts constituted a core collection of Old Master art while a number of subsequent gifts and purchases, including an important group of Dutch and Flemish paintings and a collection of 16th- through 19th-century European art, have further augmented the collection. Notable painters represented include Jan Van de Velde III, Andrea Vicentino, Louis de Boullogne the Younger, Guiseppe Marchesi and Lodovico Lipparini. Early modern art in Europe and the United States also has been a collections priority for UAM; for instance, in 1966 UAM was the first New Mexico institution to honor Georgia O'Keeffe with a one-person exhibition and in 1977, UAM mounted the first museum retrospective of the American Abstract Artists, an important group of mainly New York-based artists established in 1936. The fruits of this collecting policy are seen in UAM's varied collection of paintings: works by Europeans such as Max Beckmann, Wassily Kandinsky, Fernand Leger, and Laszlo Moholy-Nagy provide a context for works by such Americans as Rosalind Bengelsdorf, Hilaire Hiler, Rebecca Salsbury James, Gina Knee, John Marin, George L. K. Morris, Georgia O'Keeffe, Charles Sheeler, and Marguerite Zorach. Recent years have brought more acquisitions, especially works by

contemporary painters such as Richard Diebenkorn, Oli Shivonen, Agnes Martin, Joan Brown, Joseph Raffael, and Fritz Scholder. UAM is also honored to house the archive of noted painter and printmaker Clinton Adams.
UAM's collections total nearly 30,000 objects, by far the largest fine art collection in the state of New Mexico. UAM serves an academic community of over 23,000 students and roughly 19,000 faculty and staff of UNM, the flagship research university within the state educational system. UAM's audience includes the residents of the City of Albuquerque and surrounding counties, numbering over 700,000 people, as well as the remainder of the over 1,800,000 residents of New Mexico. In addition, the Museum is a resource for numerous visitors to the Southwest region, and participates within the international scholarly community.
All of UAM's collections directly support the courses offered by the UNM Art and Art History Department, and are used by departments and programs campus-wide. UAM is the only institution in New Mexico that consistently collects and displays fine art from the Western European tradition, with the ability to present an outline of major artistic currents from the 16th century through the present. The paintings collection provides a context for other aspects of UAM's holdings, including important collections of photography, printmaking, and objects emphasizing the Hispanic tradition.

4. How does this project relate to the Museum's ongoing conservation activities?
The University of New Mexico Art Museum (UAM) is committed to preservation of its collections and to educating museum professionals in preservation topics and techniques. UAM has been very active in its preservation-related efforts, with substantial results.

UAM has a long-standing history of preservation assessment and mitigation projects. A CAP survey of UAM was completed in 1992. In 1998, Garrison/Lull Inc. prepared a Conservation Environment Consultation Report and Renovation Program for the Museum. UAM has since been fortunate to receive a National Endowment for the Humanities grant matched by monies from UNM Administration to renovate the building. Installation of a new HVAC system will allow, for the first time in the Museum's history, full control of temperature and relative humidity conditions within the gallery and collections storage spaces. This extensive project necessitated movement of most of UAM's collections to a secure facility off-site. As a beneficial by-product of the situation, UAM has taken the opportunity to clean and improve the paintings and sculpture storage areas, including replacement of wooden bins with new enameled metal units. The entire project, including the system upgrade and reinstallation of the Museum's collection, is scheduled for completion by the end of 2002.

The first survey of UAM's paintings collection was made in 1971 by Perry Huston and Associates. In 1987 Siegfried Rempel made a condition survey of nineteenth-century photographs in the collection. In the 1980s, projects including the treatment and

rehousing of a number of paintings, works on paper, and photographs were sponsored by the Institute for Museum Services and the National Endowment for the Arts. In 1993, through generous private support, UAM began a series of summer projects involving a consulting conservator, Christine Young, and a succession of conservation students from each of the U.S. graduate degree programs. These efforts have enabled the completion of an item-by-item assessment of UAM's photograph collection, as well as numerous priority treatments of photographs and artwork on paper. In 1995 UAM took steps to improve the housing and care of these collections by hiring a professional matter/framer with additional education in preservation of paper collections. More recently, in 2001 UAM renovated and reorganized a storage space, creating the first institutional paper and photographs conservation laboratory and corresponding staff position in the state. UAM's Museum Conservator specializes in the conservation of paper and photographs and now spearheads UAM's preservation efforts.

UAM conservation staff monitors museum spaces for pests and housekeeping problems on a regular basis as well as maintaining hygrothermograph records of environmental conditions. Exhibition and storage areas are monitored for both UV and visible light levels. UAM is one of the Field Trial sites for the Image Permanence Institute's Climate Notebook/PEM project to beta-test new environmental monitoring dataloggers and software.

5. What are the anticipated benefits of this project?
This survey will help UAM identify immediate as well as longer-range conservation needs of the painting collection. This collection is the most important part of UAM's holdings yet to be surveyed and has been designated as a funding priority. The essential information provided by this specialized assessment will aid in the preparation of UAM's long-range preservation plan, fully incorporating this important educational and research component within the preservation of the larger collection. With reliable data in hand, dedicated funding can be sought to carry out the priorities established by the survey, implementing a well-informed and sustainable plan. Improved preservation of this collection of paintings, unique within the state, will ultimately benefit UAM's audience by allowing exhibition and scholarly access to artwork now too fragile to be shown.

6. How will the UNM Art Museum ensure that ongoing museum functions are not inhibited by these project activities?
The project is anticipated to have little impact on ongoing museum activities because it will take place in the painting storage vaults and adjacent preparation areas, not in public areas of the museum. Additionally, the paintings conservators who will perform the examinations are outside consultants who will interact primarily with UAM's project team, without affecting other museum operations. The UAM project team members are part of UAM staff whose salaries are included in the Museum's annual operating budget, reflecting the Museum's support of collection management. They all have responsibilities for the care of collections and manage storage facilities as part of their ongoing duties. Staff will adjust the schedule of their other commitments to incorporate this project into their collections-related tasks.

7. How does the project budget support the project goals and objectives?
In planning this project, proposals and estimates from two local private paintings conservators as well as from BACC were compared for content and expense. BACC's approach appealed to UAM staff because its "triage" checklist approach to a survey of this kind will provide necessary documentation of the collections while also serving other collection management needs of the Museum. Checklist reports with clear priority designations will provide an appropriate level of information to set exhibition and loan policies as well as to select individual items needing more conservation attention.

UAM has budgeted for staff time and supplies to generate a checklist form for each item in the survey as well as to assist in the survey process and participate in data entry I interpretation and reporting. BACC has included time to write its summary report on UAM's paintings collection. Equipment required for the project is already available between UAM and BACC; no additional equipment will need to be purchased. Travel and related expenses to bring the conservators to Albuquerque are reasonable and within current rates for such costs. Staff time is part of staff members' regular, on-going duties, and such projects are a priority activity under UAM's existing long-range plan, which articulates the Museum's continuing commitment to collections care and preservation.

8. What are the qualifications and responsibilities of the project personnel?
Laura Downey, UAM Conservator, is the leader of the project team and will be responsible for the overall direction and design of the project, scheduling staff members to assist the visiting conservators, leading the review of the assessment and proposed next steps, and preparing the final report on the project. Laura is a conservator of photographs and art on paper, a 1994 graduate of the Art Conservation Department at the State University College at Buffalo and a 1999-2000 Mellon Fellow at the Advanced Residency Program in Photograph Conservation, George Eastman House/Image Permanence Institute, Rochester NY.

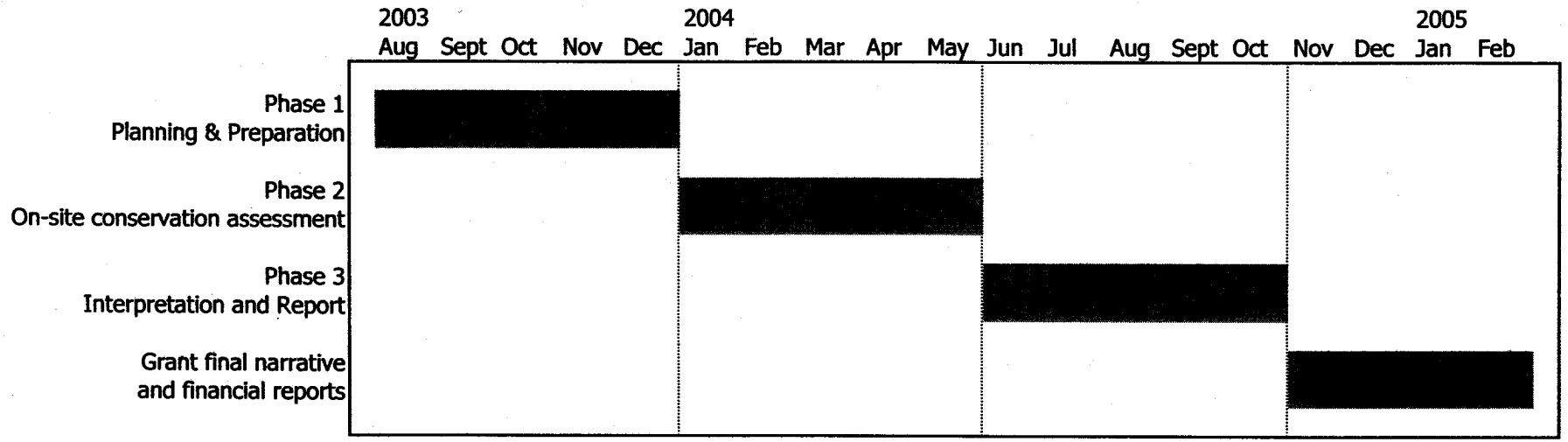
Bonnie Verardo, Collections Manager, oversees the inventory, cataloguing, database, photographic rights and reproduction, general conservation and storage practices, processing of gifts and loans, and shipping of the collection. She has more than fifteen years of museum experience, including serving as the Acting Registrar for the National Hispanic Cultural Center and as Director of a contemporary art gallery.

Kate Guscott, Conservation Assistant, has twenty-six years of experience as a professional matter and framer. She has received specialized training as a conservation technician from conservator Christine Young, as well as advanced training in preservation housing techniques at the New York University Conservation Center and at the National Gallery, Washington DC.

Resumes for UAM project team members and the consulting paintings conservators from BACC are attached.

UNIVERSITY OF NEW MEXICO ART MUSEUM
CONSERVATION PROJECT SUPPORT: DETAILED CONDITION SURVEY OF PAINTINGS COLLECTION

SCHEDULE OF COMPLETION



Slate Valley Museum
Granville, New York

Project Type: Environmental Survey
IMLS Award: $4,492
Match: $4,492
Total Project: $8,984
Museum Budget: $95,700

IMLS Conservation Project Support Application Narrative
Slate Valley Museum
Granville, New York

I. What is the design of the project? The project is the second phase of a three-part conservation initiative to improve environmental conditions in the Slate Valley Museum's exhibition space, a 53,' by 46' reconstructed 19th century Dutch barn. Working with the museum director and registrar , a museum conservator and two environmental engineers will survey the environmental conditions of the barn and produce a written assessment that includes recommendations for environmental improvements. Specifically, they will review data collected during the present phase of the initiative-environmental monitoring. Then the principal engineer and museum conservator will schedule a one-day site inspection of the building, the collections, and the present mechanical systems. Using all the information collected, the engineers will develop a specific plan of action that would address the building's thermal limitations, the collection, best space usage, and cost conscious climate control improvements. The conservator's consultation time will be one day, the principal engineer's consultation time will be two days, and the control systems engineer's consultation time will be three days. The museum registrar will average about four hours a week for four months during the project collecting, summarizing, and reporting the environmental data. The museum director will manage the project, averaging about one day a month for five months during the project. Both the museum registrar and the museum director will assist the consultants and participate in discussions during the on-site visit. Beyond this project, the third and future phase of the conservation initiative will be the implementation of recommended environmental improvements. The schedule of completion of the proposed project in September 2003 would follow the tasks outlined in the museum's three-year strategic plan, and will allow the timely application for a second IMLS Conservation Project Support grant for environmental improvements. *Pertinent excerpts from the Strategic Plan are included in the supporting documentation.*

2a. What are the proposed conservation methods and why are they conservationally sound? Conservator M.J. Davis in a 2001 IMLS CAP General Survey of Collections recommended this$ project and the proposed consultants to follow two other collection initiatives-moving the collection to a new environmentally controlled collection storage area, and establishing an environmental monitoring system for collection storage and exhibition areas in the museum. The CAP General Survey is included in support documentation. Having recently received grant funding for the specification and purchase of the environmental monitoring equipment, and for M.J. Davis's return to train staff and volunteers in re-housing an-.-d-moving the collection and using the monitoring equipment and accompanying software system, we are planning for the next highest collection care priority outlined in Davis's survey-improvement of the environment in the barn exhibition space. The monitoring system to be used is a preservation environmental monitor and software package recently developed by the Image Permanence Institute at Rochester Institute of Technology and recommended to us by Richard Kerschner, Chief Conservator; Shelburne Museum. Conservator M.J. Davis has consulted in the area of environmental monitoring, and is qualified to train the staff in the use of this particular PEM system. The environmental engineers, working with Richard Kershner, will gather additional facts about the building's environmental behavior by performing detail visual inspections of the building's physical features conducting selected tests of moisture

conditions, reviewing building drawings, and interviewing staff familiar with the facilities. The engineering firm specializes in the special needs of museums and their collections.

3. What is the object(s), historic structure(s), or specimen(s) that is the focus of this project? The museum's collection is made up of approximately 1500 objects of several collection types including ceramic and glass, furniture and wood artifacts historic objects, industrial machinery and technology, metal tools, paintings, photographic materials, stone artifacts, textiles and costumes, and drawings, maps and prints that relate to the slate industry along the New York and Vermont border. At anyone time, approximately 30%-40% of the collection is on exhibit in the barn structure, the main exhibition area. The barn was constructed in 1995 using an old timber frame from a New World Dutch barn, which was donated to the museum as a barn preservation project. The exterior was finished with traditional 2" x 6" wall framing completed with stained clapboards and a slate roof. The one-room open interior space measures 53' x 46' with sidewalls 21' high and the roof ridge 37' high. A computer disk with digital photos of the barn gallery and exhibits is included in support documentation. The CAP survey cites three problems: the building is very warm during summer months, the large window areas on the east and west sides of the building make light management difficult, and during the cooler months, condensation is present on the windows and interior walls.

4.How does the project relate to your museum's ongoing conservation activities? A new three-year strategic plan approved by the Board of Directors in December 2001 incorporates the recommendations of the CAP General Survey of Collections completed in August 2001. The CAP General Survey is included in support documentation. In addition to conducting the CAP survey, M.J. Davis approved the storage furniture purchased and installed in a 10' x 26' collection storage area in the museum's recent building addition; Richard Kershner consulted with the building project manager, the contractor and the museum director about the storage area environment and specified heat, ventilation and air condition systems that will be installed this fall. Grant funding was recently awarded to purchase environmental monitoring equipment for storage and exhibit spaces and to hire Davis to return to train staff and volunteers in re-housing and moving the collection and in using the new environmental monitoring system. After several months of monitoring, the next conservation priority is to use that data to plan improvements to the environment of the barn exhibition space.

5. What are the anticipated benefits of this project? All exhibitions and programs are designed around the permanent collection. A 2002 Special Exhibits and Events brochure is included in support documentation. This project is central to the long term care and exhibition of the museum's growing collection. The museum preserves an important aspect of the history of the local community by collecting, exhibiting, and interpreting materials, objects and machinery that relate to the history of slate quarrying in the slate belt region of New York and Vermont. The cultural heritage of the diverse ethnic populations who immigrated to the area between 1850 and 1910 to work with slate is also represented in the museum's collections, exhibits and programs. The museum provides educational services for schools and youth groups, elder hostel programs and other adult groups, and general audiences. High quality, intelligent programs and exhibits focus on the interpretation of the geology of slate, the history of the slate industry, and the social and cultural history of the ethnic groups associated with the industry. Our public event

series includes lectures, tours, concerts, demonstrations, gallery talks for permanent and changing exhibits, and ethic craft classes.

6. How will the applicant ensure that ongoing museum functions are not inhibited by these project activities? The project has a small impact on the workload of the staff since the consultants must do most of the work. With the completion of other collection conservation initiatives before May 1,2003, the museum director and registrar will be able to participate in the project and still maintain their regular workweek schedule. Recording environmental monitoring is an ongoing part of the registrar's job, and the software package used fortunately computes analytical summaries of the data. Similarly, the director's time in managing the project and participating in site visit and related discussion with project team members will be incorporated into her annual work plan. The survey project by its nature is rather unobtrusive in terms of the museum's ongoing programming and exhibition functions with the exception of the site visit, which can be scheduled on a day the museum is not open to the public and exhibit installation is completed. The museum's current Annual Report is included in supporting documentation to provide the scope of ongoing museum junctions.

7. How does the project budget support the project goals and objectives? The museum director and the consultants jointly developed the project budget. Director Mary Lou Willits relies on her successful project management skills in estimating staff time for the project. An excerpt from the current annual work plan is attached to the museum 's Strategic Plan that is included in supporting documentation. Both consultants have extensive experience in this type of project and in estimating the time they will need given the size and particulars of the building, the collection, the CAP survey, and staff observations. Engineering principal, Ernie Conrad of Landmark Facilities Group, Inc., Norwalk, CJ: provides a detailed specification of the work he and the control systems engineer and other members of the project team will perform in his proposal/commitment letter that is included in the supporting documents. Their thorough assessment and thoughtful "cost conscious climate control improvements" plan will in the long term provide the museum with the most efficient and economical improvements that conserve the collection while on exhibition in the barn gallery.

8. What are the qualifications and responsibilities of the project personnel? The project personnel include the museum director, Mary Lou Willits; the museum registrar , Alissa Caprood; Shelburne Museum Chief Conservator Richard Kerschner; Landmark Facilities Group Principal Ernest Conrad and Control Systems Engineer Scott Fitch. Their resumes are included in supporting documentation. Museum Director Mary Lou Willits has been director for two years, and she initiated and participated in the CAP survey in 2001. She also initiated the museum's three-year strategic plan, ensuring that the collection care priorities of the survey were included and sequenced by highest priority .The CAP survey and pertinent excerpts from the Strategic Plan are included in supporting documentation. She has successfully funded and managed projects that include the specification and installation of custom designed compact shelving in the collection storage area of the newly build museum addition; the specification and current installation of environmental controls for the new collection storage area and program room; the specification and acquisition of a newly developed environmental monitoring system and computer software for the collection storage area, program room and the barn gallery; the training of staff in the use of the PEM by a conservator; the training of staff

and volunteers in re-housing and moving the collection into the new collection storage area by a conservator; and, the technical assistance of a paintings conservator from the Williamstown Conservation Laboratory to make a conditions report of a 24-foot WP A mural and to assist in its reinstallation in the new addition's program room. Mary Lou has 12 years of experience in museum and gallery administration and education. **Museum Registrar Alissa Caprood** has successfully managed multiple collection management and care initiatives in her first year at the museum. Her work includes the computerization of collection records using new collections management software; reconciliation of collection records and objects; specifying and ordering supplies for re-housing the collection before it is move to the new storage area; managing Collection Care Committee meetings; and, attending workshops on object labeling and care of archival materials. Alissa is a master's degree candidate in anthropology .Principal **Engineer Ernest Conrad** founded Landmark Facilities Group in 1988. He has been responsible for developing innovative solutions to the engineering challenges posed by historic structures and the collections they house. Ernest has developed a national reputation for understanding the behavior of moisture in building materials and engineering unobtrusive environmental improvements. His projects include a comprehensive upgrade of climate control systems for the Frick Collection, New York; a comprehensive master plan of a climate control system for Pierpont Morgan Library, New York; consultant to the conservation department for a new museum facility for the National Museum of the American Indian, Bronx, NY; and, design consultant for a new construction and expansion project at the National Museum of Racing and Hall of Fame, Saratoga, NY .Ernest **chose Control Systems Engineer Scott Fitch**, who works at Landmark Facilities Group, because of his special expertise in designing precision HV AC and control systems for temperature and relative humidity sensitive environments. In his position in the firm, Scott is responsible for project engineering and coordination from conception to completion, including construction support and supervision. His projects include designing a case climate control system for the Library of Congress "Top Treasures Case"; designing a low cost/high accuracy climate control system for a painting storage vault for Monhegan Museum, Monhegan Island, ME; and evaluation and design of climate control systems for storage facilities and historic buildings for numerous National Park Service sites. **Museum Conservator Richard Kerschner** has 15 years of experience with practical climate control methods and systems in a variety of buildings at the Shelburne Museum where he is chief conservator. His consulting projects involving environmental improvements include Cranbrook School and Saarinen House, MI; St. Johnsbury Athenaeum, VT; Canterbury Shaker Village, NH; and, Strawbery Banke, NH.

Time Line IMLS Conservation Project Support
Slate Valley Museum, Granville, NY

	2-May	2-Jun	2-Jul	2-Aug	2-Sep	2-Oct
Notification of Award	xxxxxxxx					
Environmental Monitoring and Reporting	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx					
Engineer's Summary of Environmental Monitoring					xxxxxxxx	
Consultants Site Visit					xxxxxxxx	
Final Report and Recommendations					xxxxxxxx	

University of Pennsylvania Museum of Archaeology & Anthropology

Philadelphia, Pennsylvania

Project Type: Treatment
IMLS Award: $30,349
Match: $30,387
Total Project: $60,736
Museum Budget: $11,303,000

NARRA TIVE

1. What is the design of the project?

The project described in the proposal is the cleaning, repair and rehousing of seven ceramic coffins from the Mesopotamian site of Nippur, excavated in 1888 to 1900 by the University of Pennsylvania Museum. Many of the original repairs, a combination of adhesive and wire staples, are losing cohesion and coming apart at an accelerated rate owing to the size and weight of the objects. The treatment of the objects will be carried out by independent conservator Julia B. Lawson using methods and materials approved by Virginia Greene, Senior Conservator, and Dr. Richard L. Zettler, Associate Professor of Anthropology and Associate Curator, Near East Section.

The conservation work will include the following:

- Examination of the objects, and sampling of the clay bodies for future analysis.
- Research, including examination of the excavation records in the Museum Archives and a search for records relating to the original treatment and repair. Detached fragments of coffins and lids will have to be sorted and identified. Old adhesives will be identified.
- Documentation, including photographs and written reports, before, during and after treatment. Primary record photography will be black-and-white negatives, supplemented by digital images-
- Mechanical cleaning with brushes and vacuum to remove surface dirt-
- Removal of old repairs. Wire staples will be cut, and removed with a pliers ifnot set with adhesive; solvents for the removal of adhesives will depend on the identification of the adhesive-
- Consolidation where necessary, using a resin with good long-term aging properties.
- Desalination, either by immersion or poultices.
- Repair with stable modern materials, and loss compensation where necessary .
- Construction of new permanent storage mounts which will enable the coffins to be moved safely for transfer to a new storage location and for later study, and which will protect the objects from airborne pollutants.

The time required for the project is 12 months. This is based on the experience of Ms. Greene and Ms. Lawson, taking into account the size and weight of the objects, and the time needed to take apart the old repairs. The work will be carried out during the period of July 2003 through June 2004. The University Museum has set up a satellite lab for projects of this kind; the room will be assigned to the exclusive use of this project starting in July 2003.

An announcement of the project, information on the importance of the coffins and a report on the treatment will be put on the Museum's website (www.museum.upenn.edu). Once the conservation is complete, the objects will be available for study. Two scholars are currently interested in the material, Dr. Edward J . Keall, Curator at the Royal Ontario Museum, who is preparing a major publication on the Parthian material from Nippur, and Heike Richter, PhD candidate from the Johannes Gutenberg-Universitat Mainz, who is writing her dissertation on burial practices in Mesopotamia in the Parthian period. Dr. Zettler will also write two articles on the coffins, one for the Museum's popular journal Expedition, and one for a professional journal (IRAQ or Baghdader Mitteilungen). It is also anticipated that several of the coffins will be included in a new installation of the Mesopotamian collections which is currently in the planning stage.

2. What are the proposed conservation methods and why are they sound?

The proposed conservation methods conform to all current professional standards for long-term stability and maximum possible reversibility. They are the least invasive and most efficient techniques that will

accomplish the desired result of long-term preservation. The room in which the work will be done has sinks, adequate ventilation, electrical service and worktables; a fume hood is available in a nearby room. See Supporting Documents A for examination reports and treatment proposals.

Examination will concentrate on visual inspection, including the use of magnification and a UV light source. Old adhesives will be identified. Samples of the clay body will be taken for future analysis, although the analytical work is not part of this project. Sampling of Museum objects is controlled by the Museum's Scientific Testing Committee, and a formal application will be submitted to that body. Research, which will be carried out with the assistance of the Curator, will include a review of excavation records and any information that can be located in the Museum Archives relating to the previous repairs.

Documentation will include full written and photographic documentation of pre-treatment condition, all treatment procedures, and after treatment condition. Photographic documentation will concentrate on black-and-white film, with digital photographs taken as supplementary material.

Surface cleaning will employ methods which will remove foreign material while protecting the original surface. Mechanical cleaning with soft brushes and vacuum will be the primary method used. Solvents needed for adhesive removal will be chosen after the adhesives are identified. In all cases the solvents chosen will be the least toxic material able to do the work. Lab safety at the Museum is supervised by the University Health and Safety Office. Personal protection (gloves, aprons, masks) is provided by the Museum Conservation Laboratory for everyone working on conservation projects.

Removal of wire staples will be carried out by the traditional technique of cutting the staple in the center and lifting the wire out of the holes using a pliers (if it is not set in with adhesive). A small hand-held rotary tool with disk cutters will be used to avoid contact with the surface of the object while cutting. Some of the joins with existing staples appear to be secure, and the staples in good condition. As the staples are on the interior of the coffins, the conservator will consider the possibility of leaving some of these in place. The final decision will be made by the Senior Conservator, with the approval of the Curator, based on an evaluation of the condition of the join and potential damage caused by the removal of the staples.

Consolidation will be carried out using Acryloid B72 (ethyl methacrylate copolymer) in 50:50 acetone: ethanol. This resin is currently the material of choice for the consolidation of archaeological ceramics. It is known to have good long-term aging properties, is economical and easy to use.

Desalination will be carried out by either immersion or poultices, after testing small sherds. It is anticipated that immersion will be possible; if not, a search of the conservation literature will be carried out to identify the most appropriate material for poultices. The level of salt removal will follow current standards for archaeological material (H.F. Beaubien in AIC-OSG Postprints, 1999).

Repairs will be done with Acryloid B72 in 50:50 acetone: ethanol, with a paste of B72 and glass microballoons used where necessary to fill out the join. The microballoons are inert, and provide a suitable bulking agent that is compatible with the resin. The size, weight and condition of the coffins makes it possible that dowels will be needed to stabilize some joins. These will be used only where essential, will be made of synthetic materials and put in place with Acryloid B27/microballoons.

Loss compensation will be made with a paste of Acryloid B- 72 and glass microballoons. The extent of loss compensation will depend on the judgment of the conservator concerning what is needed for the stability of the object, and the preferences of the curator where stability is not at issue.

Storage supports will be made of plywood sealed with acrylic latex paint and covered with closed cell

polyethylene foam (Ethafoam). Handholds will be cut in the sides of the plywood to make carrying easier. To cover the coffins in storage, a frame made of plastic pipe will be attached to the support, and covered with heavyweight polyethylene sheeting. This will protect the objects from dust and other airborne pollutants, and enable the objects to be easily recognized. Rigid PVC pipe, unlike flexible tubing, has good aging properties in a museum environment.

3. What are the objects that are the focus of the project?

The objects which are the focus of the project are seven ceramic coffins from the southern Mesopotamian site of Nippur, in present-day Iraq.

Nippur was one of the largest and longest-lived cities in Mesopotamia. It was occupied before the 6th millennium BCE, and the occupation continued until ca 800 CE. Throughout its early history, Nippur was a large and prosperous city which served as the major religious center of Mesopotamia. In the late 18th century BCE Nippur's fortunes began to fluctuate. Perhaps because of a combination of politico-economic and environmental factors (such as drought), the city experienced periodic abandonments alternating with times of resurgence. After one such abandonment in the last one hundred and fifty years BC, the city was revived by a Parthian (Persian) ruler as part of a deliberate strategy to control international trade. As a result, extensive remains of the Parthian period cover earlier levels at Nippur.

The University of Pennsylvania Museum excavated at Nippur from 1888-1900, undertaking four major field seasons. Penn also co-sponsored excavations at Nippur with the Oriental Institute, Chicago, from 1949-51. The Nippur collection at the University of Pennsylvania Museum, approximately 5200 pieces, includes pottery and glass vessels; metal weapons and jewelry; stone beads, cylinder seals and weights; and clay objects including plaques, loom weights and cuneiform tablets. Detailed information on the provenience of the coffins and associated grave goods can be obtained from the records of the excavations in the Museum's Archives; the excavations have not been fully published. The University Museum houses about half the material excavated at Nippur in the late 19th century , probably the largest such collection in the world and certainly the largest in the United States. Smaller collections from Nippur (all from excavations in 1949-1967) are in the Oriental Institute, Chicago, the Metropolitan Museum of Art and Yale University. None of thee collections include coffins. Coffins from Nippur are included in the Nippur collections in the Museum of the Ancient Near East in Istanbul, and comparable objects (from Uruk) are in the British Museum, London, and (from the site of Babylon) in the Vorderasiatisches Museum, Berlin. These are the only examples outside of Iraq.

The seven coffins in the collections of the University of Pennsylvania Museum represent three distinctive styles. The earliest are the type commonly referred to as a "bath-tub coffin" because of the shape: flat bottom and deep vertical sides with one rounded and one straight end. Coffins of this type normally had wooden lids. One example is decorated with a rope pattern. These first appear in northern Mesopotamia (Assyria) in the mid to late 2nd millennium BCE, and in the south in the 9th-8th c BCE, at the time of the expansion of the Assyrian Empire. At Nippur, they are most common in 550-300 BCE, though they continue to be used in the Seleucid period (3rd-2nd c BCE). These coffins held flexed burials, the normal custom in Mesopotamia.

The second type is the trough-shaped coffin, long open shapes with a flat bottom, vertical sides and rounded ends. These commonly had a two-part ceramic lid. Similar coffins from Babylon date to the late Seleucid and Parthian periods. Since Nippur was sparsely occupied during the Seleucid period, the University Museum examples probably date from the Parthian period (lst-2nd c CE) and are contemporary with the slipper coffins.

The slipper coffins (one glazed, two unglazed) have a long tapering shape, with an opening on one side of the coffin at the wider end and a hole in the foot. The opening was generally covered with an oval lid or with fragments of large pottery vessels. These date to the Parthian period (Ist -2nd c CE). The glazed coffin is decorated with nude female figures in low relief, framed by rope-pattern bands. One of the unglazed coffins has a series of appliqué twisted ropes, the other has an area of low-relief modeling in a geometric pattern around the opening.

The University Museum collection includes one of the few glazed coffins from Nippur (although glazing is common at other sites); this coffin also has unusual decoration. Slipper coffins from Uruk, for example, are decorated with Parthian "warriors" set in panels formed by rope-impressed bands; the coffins from Nippur, however, include examples decorated with naked women. Figurines depicting naked women are common through Mesopotamian history and are thought to reflect some preoccupation with fertility .Their occurrence on coffins, however, is unusual. The decoration may reflect Hellenistic or Persian influence; one possibility is the revival of worship of a female deity such as lnanna/Ishtar , as it is known that the Parthians rebuilt the temple of the goddess lnanna at Nippur.

The seven coffins are thus an important part of the material from Nippur, and the only examples of their kind in the United States. They help illustrate changing burial practices at Nippur {and more generally, in southern Mesopotamia) over a period of ca. 1000 years, from the 9th-8th c BCE to the 2nd C CE. The varying styles reflect the penetration of Assyrian practices from the north, and then the influence of Hellenistic customs with the change from flexed to extended burials, as well as the introduction of a Persian style of coffin with unusual decoration.

4. How does the project relate to the Museum's ongoing conservation activities?

In 1978, the Conservation Department of the University of Pennsylvania Museum carried out a survey of over 40 areas then used for storage of the Museum's collections (Supporting Document B). As a result of this report, which made recommendations for both short and long-term actions, the Museum set priorities for conservation and initiated its current Collections Management Program (Supporting Documents C and D). Since 1978, the Museum Administration has demonstrated a continuing commitment to the preservation of the collections. Preservation, Education and Research are considered the three primary responsibilities of the Museum.

Short-term actions recommended in the survey were initiated immediately, and longer term plans have been carried out in every Curatorial Section. In addition, each Section, in consultation with the Conservation Laboratory, established priorities for conservation of specific objects and parts of the collection. Work proceeds independently in all Sections. In-house conservation is directed primarily toward those pieces selected for exhibit or loan. Owing to limited staff and financial resources, the conservation of objects of importance which do not fall into one of these categories must be supported by outside funding.

Among the grant-supported projects are the following funded by IMS/IMLS: the cleaning, labeling and rehousing of the Museum' s collection of archaeological textiles from Peru, including the construction of specialized study folders for half the collection; setting up two satellite pottery desalting facilities in the Museum, and training Section staff and volunteers to carry out desalting projects safely and efficiently; the technical examination and conservation of a silver boat-shaped lyre from the site of Ur; and the recently-completed conservation of 103 pieces of Greek, Roman, Etruscan and Cypriot stone sculpture. The desalting facilities are still in operation, and have contributed to the preservation of major archaeological collections from Egypt and Peru. The lyre is on permanent exhibit, and is a major part of a new book, Two Lyres from Ur, by Maude de Schauensee, recently published by the Museum A number of the Greek and Roman sculptures are on permanent exhibit, and a publication on the collection is in preparation.

The Near East Section of the Museum oversees approximately 100,000 objects from Mesopotamia, Iran and Syro-Palestine, as well as a collection of 35,000 cuneiform tablets. Grants from foundations and private donors have enabled the Section to hire interns to assist with the inventory and organization of the collections, purchase shelving and cabinets, and to conserve several unique archaeological objects from the site of Ur. The inventory is complete, and the collections have been organized in three rooms by area, site and type of object. Almost all storage units are now museum-quality metal shelving and cabinets, with polyethylene foam padding on shelves and trays. Starting in the spring of2003, all of the Section storage rooms, including an additional area made available by the transfer of objects to the Mainwaring Wing, will be reorganized to make better use of available space, and the last old shelving units replaced.

The Nippur coffins are the only Near Eastern objects still separated from the main collections. An attempt to move them to new storage units revealed that apparently stable repairs were deteriorating, and the weight of the ceramic has caused continuing damage. The Nippur coffins are the highest conservation priority for the Near East Section at the current time. This project is also considered to take priority over needs in other Sections because of the recent accelerated deterioration of the objects.

5. What are the anticipated benefits of the project?

This project will enable the Nippur coffins to be preserved for future study and research. These objects are part of a unique, documented archaeological collection, the only examples in the United States, and an important resource for students of Mesopotamian archaeology and history.

Information on the coffins and their historical importance, along with a report of the treatment project, will be included in the Museum's website (www.museum.upenn.edu). Once the conservation is complete, the objects will be available for study by students and faculty from the University of Pennsylvania and other institutions. It is also anticipated that several of the coffins will be included in a new permanent installation of the Mesopotamian collections, currently in the planning stage. This will once again make the objects, placed in historical and cultural context and accompanied by related grave goods, directly available to Museum visitors. The coffins will be included in the book currently being prepared by Dr. Edward J. Keall, Curator at the Royal Ontario Museum, on the Parthian material from Nippur. Heike Richter, PhD candidate at the Johannes Gutenberg-Universitat Mainz, is writing her dissertation on burial practices in Mesopotamia in the Parthian period, and has visited the University Museum to examine the coffins and associated excavation records. Dr. Richard Zettler will also write two articles, one for the Museum's popular journal Expedition, and one for a scholarly journal (IRAQ or Baghdader Mitteilungen).

6. How will we ensure that ongoing museum functions will not be inhibited by this project?

In order to ensure that regular conservation activities will continue at their present level, it will be necessary to hire a conservator specifically for this project. The allocation of a separate room for the treatment will also ensure that conservation projects in the main laboratory are not disrupted. Ms. Lawson is an experienced objects conservator who has carried out previous conservation projects for the Museum, and will require only minimal supervision. As Ms. Greene normally spends part of her time supervising contract conservation work, this project will not interfere with her other responsibilities. Similarly, Dr. Zettler's time will be part of his usual time allocation for special Near East Section projects.

7. How does the project budget support the project goals and objectives?

The budget consists of three main items:
a) A salary for the contract conservator, who will be hired on a term basis by the University .This was determined to be the most cost-effective procedure, compared to hiring a conservator on an hourly or daily

basis. The conservator was chosen on the basis of her availability, experience with archaeological material, and previous satisfactory relationship with the Museum. The time allocation and schedule of Completion are based on previous experience with similar objects.

b) Supplies. Costs are based on prices obtained from suppliers. The materials chosen are based on current accepted practice and the experience of Ms. Lawson, Ms. Greene, and other members of the conservation staff.

c) Time contributed by Dr. Zettler and Ms. Greene. Dr. Zettler will assist with research into the archaeological records, give final approval for removal/non removal of old repairs, and approve the extent of loss compensation when not related to stability. Ms. Greene has assisted in establishing the conservation procedures, and will provide oversight and advice during the course of treatment. The time allocations are based on past projects of a similar nature.

8. What are the qualifications and responsibilities of the project personnel? (See Supporting Documents E for Resumes.)

Julia B. Lawson received a BF A. from Moore College of Art, and an MS with a Certificate in Conservation from the Winterthur/University of Delaware Program in Art Conservation. She has worked at the Germantown Historical Society and the Philadelphia Museum of Art. Ms. Lawson was the recipient of a Kress Conservation Fellowship to study manufacturing techniques and conservation treatments for Mediterranean ceramics, and is currently completing a major conservation treatment project on Etruscan, Roman and Bronze Age ceramic and bronze objects for a new exhibit at the University of Pennsylvania Museum. Ms. Lawson will carry out the conservation treatments.

Virginia Greene holds degrees in Anthropology from Barnard College and the University of Pennsylvania, and a Diploma in the Conservation of Archaeological and Ethnographic Materials from the Institute of Archaeology, University of London. She has been Head of the University Museum Conservation Laboratory since 1971. Ms. Greene has taught at the Winterthur/ University of Delaware Conservation Training Program, and lectures widely to academic, professional and community groups. She has extensive experience with a wide range of organic and inorganic materials, field experience as both archaeologist and conservator, and has been in charge of many large-scale conservation and storage renovation projects. Ms. Greene will oversee and approve all conservation treatments.

Richard L. Zettler received his BA (1972) from the University of Notre Dame, and his MA (1975) and PhD (1984) from the University of Chicago. He held positions at the Metropolitan Museum of Art, the University of California, Berkeley and the Oriental Institute, University of Chicago before coming to the University of Pennsylvania, where he is currently Associate Professor in the Department of Anthropology and Associate Curator-in-Charge of the Near East Section, University of Pennsylvania Museum. He has excavated at sites in Iraq, including Nippur, in the 1970s and has directed excavations at Tell es-Sweyhat, Syria, since 1989. The Tell es-Sweyhat excavations have been supported in part by the National Endowment for the Humanities. Dr. Zettler has authored five books including The Ur III Temple of Inanna at Nippur and Subsistence and Settlement in a Marginal Environment: Tell es-Sweyhat, 1989-1995 Preliminary Report, and more than forty articles and book reviews. He recently co-curated the Museum's highly successful traveling exhibit Treasures from the Royal Tombs of Ur. Dr. Zettler will assist with research on the excavation and previous repair of the objects, approve all treatment proposals and prepare the website postings as well as articles on the coffins.

Conservation of Nippur Coffins												
Project Activity	July 03	Aug	Sept	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May	June
Examination, Initial Documentation												
Research												
Treatment: Cleaning, Repair, Filling												
Storage Supports												
Final Reports												

IMLS Conservation Project Support - Schedule of Completion

Marblehead Historical Society

Marblehead, Massachusetts

Project Type: Treatment
IMLS Award: $40,000
Match: $43,277
Total Project: $83,277
Museum Budget: $247,228

1. What is the design of the project?

The goal of this conservation project is to stabilize and preserve 14 pairs of large original18d1 c. wooden window sashes in the principal front rooms of the 1768 Jeremiah Lee Mansion in Marblehead, Massachusetts. This nationally-significant structure has been owned and maintained for nearly a century by the Marblehead Historical Society (MHS), a non-profit educational organization founded in 1898 to collect artifacts relating to Marblehead history. The conservation of the original windows is currently the highest conservation priority for the MHS, as outlined in a 1994 Conservation Assessment Program (CAP) survey of the Lee Mansion building performed by Pamela Hawkes of AnnBeha & Associates.

This project is Phase II of a three-phase project to conserve all 51 conventional windows in the house in accordance with the recommendations of a comprehensive Window Condition Survey prepared by the project's Preservation consultant, William B. Finch of Finch&Rose. Phase I, recently completed, included the condition survey and preparation of a detailed Specifications Manual that included conservation methodology, as well as exploratory work on 4 representative windows with the goal of field-testing the recommended treatments. Phase II includes the majority of the most severely deteriorated windows and will result in the complete treatment of the sash, sills and frames in the mansion's principal rooms, all on the front, on the 1st & 2nd floors. Phase III will ultimately treat the remaining windows on both sides, the rear face, and entire 3rd floor. The condition of those windows is substantially better than that of the Phase I & II windows.

This proposed project includes sash conservation only, and will treat only the sash of the 14 Phase II windows. The goals of this project are to remedy damage from several centuries of severe driving weather inherent in an oceanside locale, and to prevent future degeneration in areas where wood has fissured or sustained losses. Condition issues include rotted or loose corner joints; erosion of molded interior sash surfaces due to past chronic condensation; severely deteriorated face and bedding glazing com-pound that allows for water penetration, moisture damage, and rotting of sash components; and deteriorated paint. Previous poorly executed wood dutchman repairs and various inappropriate fillers used during repairs to many of the sash rails from the 1960s through early 1980s are now failing. Details of existing conditions and conservation recommendations are provided in the attached Window Condition Survey, and are summarized by-window on the 3 sheets of annotated photograph elevations of the building, titled Window Condition Summary in that same report. Color copies of those photo diagrams are also attached to the IMLS Project Work Schedule.

Conservation work on all sash will include:

- Removal of all face and bedding glazing putty, using a tested method that avoids breakage of historic glass-
- Removal of deteriorated paint. (A 2"x 6" sample of existing historic interior sash paint will be retained in place in each room)
- Reinstallation of all existing glass in new putty , maintaining the existing location & orientation of each pane in the sash
- Repainting exterior and interior of the sash to match the existing room treatments.

Conservation work to correct isolated defects at specific sash will include:

- Wood dutchman repairs to replace rotted wood at comers and previous dutchman repairs that are now failing.
- Small wood dutchman repairs &/or other filling techniques to restore limited areas of severely eroded muntins.
- Limited epoxy consolidation and filling at areas of deep weathering and surface erosion.
- Re-pinning and re-wedging of loose but otherwise sound corners.

It was discovered that the window sash (and frames & sills) were constructed of eastern red cedar rather than the more commonly used eastern white pine, and it is important that eastern red cedar be used for all dutchman repairs. (see specs)

For each window, both upper and lower sash will be removed by the conservation carpenter, transported to an off-site workshop for conservation, and reinstalled afterward. For security, the window opening will be by covered by a pair of specia11y-made temporary weather-tight security panels affixed in such a way that they do not harm interior or exterior finishes. Solid plywood panels fabricated and successfully used during Phase I will be used for some windows, and an additional panel of plexiglass set into a plywood frame will be constructed if necessary , for purposes of visibility .Only 2 or 3 pairs of sash will be removed to the workshop at one time.

The proposed Phase II sash conservation would start in June 2003, pending notification of an IMLS CPS award, and would be completed in May 2005. To avoid potential delays, wood supplies would be ordered immediately after notification, in June, and sash conservation would begin in October 2003. The sash conservation would be done during the fall and winter at the conservation contractor's shop to provide optimal working conditions for this critical and labor-intensive activity .This will also allow for optimum touring conditions, without rooms being disassembled, in the spring, summer, and early fall- when out-of-town visitors come to view the Mansion -while the conservation endeavor will be evident to local residents throughout its duration. (see question 5 for the project's community benefits)

Conservation work on the sills and frames of the 14 Phase II windows is planned as part of a separately funded conservation project, due to issues of staging and the very different conservation requirements of the components (frames and sills more a part

of the building structure than the fragile sash). Application is being made by the MHS to the Massachusetts Historical Commission for state funding toward that aspect of the overall project. If funded by the MHC, frame and sill conservation of Phase II windows whose sills and/or frames also require work would ideally occur during the same 2-year period, co-ordinated with the sash conservation schedule. Frame and sill conservation would occur in the more temperate season (August-Oct.2003 & June-Oct.2004), to facilitate curing of the cedar wood on site while the sash conservation would take place off-site during colder months (Oct.2~3-March 20?4 & Jan.-March 2005), when virtually no visitors come to Marblehead. Though both the sash and frame/sill conservation are interesting to visitors, exterior work in Phase I did not prove as disruptive to summer tours as rooms darkened by the panel inserts.

The project preservation consultant, William Finch, will make up to 10 regular site visits to the house or to the contractor's shop during the project. The visits will be timed to the execution of key tasks, to discuss critical issues with the conservator as needed, and to review samples of ongoing and completed work. The project consultant will identify key areas of interior paint to be preserved on the sash in each room. He will also document the work in photo-graphs and record any important discoveries regarding early building fabric. Upon completion of the project Mr. Finch will prepare a written final report.

A substantial portion of the damage to interior sash woodwork and finishes has been due to chronic condensation caused in part by insufficient air movement between the sash and UV -filtering plexiglass panels installed in the 1970s & 1980s. To minimize this harmful condensation, the project includes replacement of aging and incorrectly mounted panels and installation of new UV -filtering plexiglass panels that will be spaced out from the sash and sized to allow for more air circulation between the panels and the glass. Experimental installation in that way during Phase I proved the proposed method to be successful in preventing or minimizing condensation. Some old, discoloring, peeling, and ineffective UV film on two front windows will be removed. Rusted iron locking pins from the 19tb & 20tb centuries have caused some damage to sash rails and are now unnecessary for security purposes; they will be removed and archived and the resulting small holes appropriately patched.

After conservation and sash replacement, in early April 2004 & 2005, after cold temperatures have abated and before the house opens for the summer season, any necessary touch-up painting of woodwork and trim surrounding the windows will be done by a qualified painting contractor. It was our experience in Phase I that very little or no touch-up painting was needed due to sash removal or re-installation (which involves carefully detaching 7-ft. tall paneled shutters and then later re-attaching after replacing the sash). As with the sash, woodwork paint colors will be carefully matched to the existing colors; all second-floor front rooms were analyzed and documented by SPNEA in 1990 and painted accordingly, and the front west parlor (nn.111) retains its 1852 hand-painted faux-bois finish, a simulated oak.

During the course of the work, the JLM curator assisted by the collections curator will remove furniture and artifacts from spaces undergoing active construction work to safe storage within the house. The curator will also facilitate craftsman access to the house. The JLM curator will coordinate schedules and work visits, write articles for publicity and MHS member publications, and carry out grant-related administrative tasks. By limiting window closure to one room at a time, the project's impact on the collections and museum operations will be maintained within reasonable bounds.

2a. What are the proposed conservation methods and why are they conservationally sound?
The conservation methods follow standard conservation practices for significant wood architectural features. Epoxy resins will consolidate and fill cracks and fissures, and small wood dutchman inserts will replace limited sections where the rot is too extensive for successful consolidation, thereby saving elements that would otherwise have to be replaced. Where replacement is necessary due to severe deterioration, the new element will exactly duplicate the features and details of the original. These procedures respect the artifacts' original integrity, and preserve as much historic material as possible. (See the Phase I final report and Phase II specifications manual.)

The sash are extremely rare and fragile, with delicate joinery elements, and their conservation is more similar to artifact or furniture conservation than building repair. As a result, the Society has entrusted oversight of the conservation to a preservation consultant and the conservation work itself to an experienced preservation carpenter, rather than a generic construction contractor. The treatment methodology and plan (copy attached) were developed by an architectural conservator, William Finch, based on the comprehensive window conservation survey he conducted in 2000-01 (copy attached), combined with the Phase I work results. The detailed specifications and Mr. Finch's ongoing supervision as preservation consultant throughout the project will ensure that all procedures and treatments reflect sound conservation practices for historic artifacts or structures. The preliminary work on 4 windows in 2001-2 by John Butler, a specialist in 18tb c. joinery techniques, field-tested the recommended treatments and helped fine-tune the Phase II specifications. Proper safety measures and equipment will be used. Care will be taken to safeguard the large panes of window glass, many of which are old or original to the house, and include both cylinder and crown glass.

The Massachusetts Historical Commission has reviewed and approved the conservation survey and project specifications.

3. What are the objects or the historic structure(s) that are the focus of this project?

The artifacts that are the focus of this conservation project are the rare original window sash that, along with the window frames and structural framing, date to the construction of the 1768 Jeremiah Lee Mansion, which was designated as a US National Registered Historic Landmark in 1963. The windows were made of eastern red cedar and are very large: 33 1st- & 2nd-floor windows measure 82"x 42" with 6-over-6 sash (1 rear window is only 2 panes wide), and the 20 3rd-fl. windows measure 40"x 40" with 3-over-3 sash. The 6 front first-floor windows are double-hung; the rest are single-hung. The sash still retain some original crown glass panes, 12 x 19" sheets of glass that were large for the period. As the only nearly complete set of original windows known to survive in a New England house of this scale and age, the Lee Mansion windows are extraordinary and unique artifacts that warrant the highest level conservation treatment as a primary element of the MHS collections. Of all the windows, the 14 window sash pairs (from the lst & 2nd fl. Principal (front) rooms) in the scope of work for which IMLS support is being sought are in the greatest need of conservation.

The mansion is one of the few urban high-style English houses in America that survives with most of its original features intact. It was built for Col. Jeremiah Lee, an affluent ship owner and merchant at the pinnacle of both his and Marblehead's commercial prosperity. In 1771, shortly after the mansion's completion, Lee was the wealthiest man in Massachusetts. With elaborate interior elements and unusually grand proportions both outside and in the spacious upper and lower stair-halls, it was and is the most opulently finished late-colonial house in New England. Its most note-worthy interior architectural features include a double-wide stair-hall with an immense round-headed window flanked by ionic pilasters, mahogany raised-panel wainscoting, and intricate carved woodwork, including foliate stair brackets and the best parlor's elaborate rococo chimney-piece; the bracket and chimney carving precisely articulate identified designs from a 1745 English pattern book. The original English wallpaper in the stair hall and two front upstairs chambers is significant as the only 18111 c. hand-painted paper in the world still remaining in its original home. In addition, an English chinoiserie wallpaper -one of several block-printed wallpapers originally in the house - survives in situ on the third floor, together with its original border. Pieces of 5 other patterns (4 floral & 2 chinoiserie) are archived.

Col. Lee's New England mansion is, and was, one of only a few fully rusticated 18111 c. houses in the country, with wide wooden siding boards that were cut and beveled to resemble dressed stone blocks on all four sides of the house. The Mansion's original distinctive sanded paint exterior treatment, intended to replicate the texture and appearance of stone, was restored in the late-.1990s during a 5-year program of conservation and maintenance, based on a 1994 paint analysis by Bryan Powell of SPNEA. That project earned a Preservation Award from the Mass. Historical Commission.

4. How does the project relate to your museum's ongoing conservation activities?

Since the Lee Mansion's purchase by the Society in 1909, its preservation has been a fundamental aspect of the MHS mission. The Mansion has long been considered the primary artifact in the Historical Society's large collection of items relating to the history of Marblehead and its involvement in America's historical, social, commercial, and industrial development from the 17111 to the 20111 century .That collection includes the historic house itself, outstanding decorative arts, utilitarian objects, historical artifacts, paintings and drawings by local and international artists, and extensive archives of documents, photographs, genealogical records, and other printed materials.

The window conservation project is part of a long-range preservation and funding plan for the Lee Mansion. The window project is now the highest priority conservation need for the MHS, as listed in the 1994 Conservation Assessment Program (CAP) survey of the Mansion building by Pamela Hawkes of Ann Beha & Associates, Boston, in conjunction with an objects survey by Nancy Davis of Rochester, NY. Since the CAP surveys, the MHS has been implementing recommendations for both the building and collections. Over the years, before and after the CAP and while building projects were underway, collections conservation, purchase of museum-standard storage containers, and preservation planning have been systematically budgeted and implemented. In addition, a huge commitment to conservation and public outreach was taken in 1998, the Society's Centennial Year, when a building was purchased for year-round exhibit galleries, office space, research activities, and increased archives storage.

Of 13 building priorities identified by the CAP (see attached report & a summary), 5 were remedied in the 1994-98 work on the building, roof, and chimney. A climate consultation and monitoring last winter met a 6111 priority item, with implementations recommended in the resulting report planned and budgeted for after the window conservation. Two recommendations concerning structural investigations in the cellar and attic will also be addressed by a structural engineer's consultation. Because the costly window conservation is more urgent, funding for that is being sought first. The window project addresses 3 of the priority recommendations listed on the CAP survey, leaving only 3 others to be completed in future years: repair of cracked plaster in a side staircase, granite foundation re-pointing, and repair of a mid-19111 c. iron fence.

This window conservation project is consistent with the Society's century-long record of stewardship and care. Over nine decades, the house has been routinely painted (especially outside), damage from hurricanes and age repaired, and rotting sills replaced at various times (see list of window repairs 1850-1980, in attachments). The roof and its substrate have been kept in good repair, gutters have been consistently cleared and repaired, and chimney re-pointing, capping, or other masonry work done as needed. From 1974-79, roof repairs and structural preservation work in the attic, primarily the cupola supporting elements, was carried out with support from a Mass.Hist.Comm. grant. Further repairs to the central pediment roof and several building sills, followed by painting, took place in the early-to-mid-1980s, directed by an SPNEA-trained contractor. In 1998, the Society completed the 5-year program of repairs to portions of the roof, main structure, portico roofs, chimney caps, and cladding boards, including replacement of downspouts and a rotted sill, some sheathing boards as necessary, and general exterior stabilization. The finishing paint treatment restored the Mansion to its original color and sanded paint appearance, based on technological analysis. That was the large-scale project which earned a Preservation Award from the Mass. Historical Commission. It was supported entirely by contributions from MHS members and friends, with only one contribution (of $5,000) exceeding $1,000.

From 1988 to 1991, the Society planned and coordinated a crucial 3-year program to conserve the Lee Mansion's rare and original 18th c. English hand-painted wallpapers. Conservator T .K. McClintock, then of the Northeast Document Conservation Center, served as project director. In two grant rounds, 1987 & 1988, the IMS awarded the Society a total of$50,000, which was matched by two contributions from a private foundation. The remaining funds toward the nearly $300,000 landmark project were raised through individual local donations. Yearly examinations and requisite minor treatments regularly performed by the conservator are made possible by annual earnings of a small wallpaper conservation endowment fund. Just this year, application was made to the Save America's Treasures program for some further major conservation of the Lee Mansion's significant and unique collection of 18th c. hand-painted and block-printed wallpapers; equally as critical as the window conservation, that project was funded for the full amount requested, and larger national foundations have been targeted for the matching funds to avoid competition for window conservation funding.

This past year, the purchase of data-loggers for regular monitoring will enable the Society to further fulfill one of the CAP directives, and is providing a more effective foundation for the development of better-informed conservation planning. A general climate evaluation by E.E.Linden Associates in 1986 determined that the house experienced only slight day-to-day humidity variations and gradual seasonal change, and advised that introduction of an HV AC system would be more harmful than beneficial to the house. A $1,000 matching grant from the Preservation Services Fund of the National Trust for Historic Preservation was applied for and awarded last year to specifically monitor and assess humidity conditions in the cellar and exterior wall cavities; the resulting report provides specific guidance for moisture mitigation.

In order to ensure that the extensive window work remains effective, the Society will continue its established practice of regular re-painting and maintenance. Working together, the curators, director, a Lee Mansion oversight committee, and the Long-Range Planning Committee of the Board of Directors have 9utlined a strategic plan for several areas of MHS operations, including Lee Mansion building preservation and maintenance.

The Society has demonstrated its commitment to sound preservation practices by securing a grant ($15,000 from the Essex National Heritage Commission, a federal agency) and raising the matching funding to allow this window conservation project to be preceded by a full Condition Survey and thorough treatment specifications. The federal assistance sought from IMLS through this application will enable this critical window sash conservation to be accomplished, to help ensure the Mansion's continuing longevity. The total funds needed to match the $40,000 request are nearly in hand, and will be fully in place by the project start date of May 2003: private foundation grants of $27,000 to date and $14,000 unofficially promised for 2003, and individual MHS member donations of $7,000 in 2002 & at least $4,000 more anticipated by Dec.2002 -all targeted specifically for this purpose.

5. What are the anticipated benefits of this Project?

First and most importantly, conservation of the window sash will stabilize and protect the window components that are the most threatened by ongoing deterioration on this remarkably intact and unique early American building. The mansion’s rare original windows are central to its structural and interpretive integrity .The Lee Mansion and its carefully considered interpretation educates a variety of audiences about the social history and culture of a prosperous American colonial seaport, as well as the social, commercial, and later industrial heritage of our country. Together, the house and the museum-quality collections within it provide a context in which visitors can more tangibly experience a place and its history -not only the cultural artifacts and Col. Lee's intriguing and risky involvement in clandestine national affairs, but the everyday lives of fishermen, craftsmen, and ordinary townsfolk, as represented through the items they made or used, or images and vestiges of the local places they frequented.

The Society's' Adopt-A-Window' fund-raising program will closely connect the contributing public to the objects of their donation, and to the Society and its preservation and education mission. Special interpretive presentations will be incorporated into public programs, talks about the project illustrated with slides win be featured as part of the

MHS annual lecture series, and a planned middle-school program with an architecture focus will incorporate age-appropriate information about the project. Through MHS Newsletters and newspaper articles about the project (samples attached), the community will become further educated about both the Mansion and historic preservation in a community that tenuously retains a remarkable amount of colonial building fabric which is increasingly at risk. The window project presents a valuable opportunity to set an example for preservation in this historic community, which includes more than 800 houses built before 1840, an4 nearly 300 from before the Revolution. Educational leadership about the need for preservation in our local community is a crucial role of the Historical Society.

6. How will applicant ensure that ongoing museum functions are not inhibited by project activities?

Because preservation activities are central to the MHS mission, this window project i§ one of the museum's ongoing functions. An informative window conservation display has been set up with examples of cedar wood, models and photographs of joinery repairs, and both original and reproduction muntin bars, pins, rails, and an entire sash without paint. Both regular and school tours will incorporate information about the project, as appropriate. Labor-intensive and delicate, the sash conservation will be done in an off-site workshop. Because the closure of some windows with solid plywood panels darkens the rooms considerably, despite some artificial light (appropriately minimal, on timers, and occupancy-triggered), the sash work will take place during the winter and fall off-season, rather than summer, to minimize impact on the house tour experience for visitors from out-of-town. Although the Mansion must be closed during months with cold temperatures, the separate MHS exhibit galleries building just across the street from the Mansion allows the Society to function and be open year-round, and the window conservation will therefore be informatively evident throughout the project's duration.

The Society looks forward to the opportunity presented by this project to more publicly demonstrate its commitment to preservation of the town's heritage and its role as mindful custodian of a remarkable historic structure. The Lee Mansion has been a house museum since its purchase by the MHS in 1909. Public tours began in 1911. Nearly 8,000 visitors are now welcomed annually at the Mansion and new year-round galleries across the street.

The activities of this project are an integral part of the Jeremiah Lee Mansion curator's role. Her primary responsibilities include Lee Mansion care, grant administration for that purpose, and scheduling or contracting with service professionals, consultants, or specialists. Both curatorial and additional Staff involvement in this project will primarily be of a support nature, since an historic architecture consultant will be contracted to directly oversee the craftsman and all scheduled work, sub-contractors, quality control, and logistical issues. The curator will remain in contact with the conservation contractor and project consultant, communicating any necessary information. She will provide the craftsmen with access to the Mansion for, to or from the project coordinator, and ensure that the Mansion is properly closed, locked, and alarmed after work. In the curator's absence, the Society administrative director can handle those security provisions. As in Phase I, the curator will also be available if questions arise during the project, and will serve as the liaison between the project coordinator and the MHS, keeping the director, president, and board of directors apprised of general progress. She will also offer special interpretive programs, present slide lectures, and write publicity or educational articles for area newspapers (samples attached), and for the MHS Newsletter and Annual Reports, informing the membership and the community about the project and its progress and importance, and crediting the IMLS and other contributors. (see samples) The curator will also write foundation grant applications; the Society president and director will support private and local business fund-raising (though matching funds are nearly all in hand for this sash conservation). Provision for supplemental cleaning is noted in the schedule of work, after windows are removed and reinstalled, in preparation for the Mansion's seasonal opening on June 1,2004 & 2005, with periodic groups in May.

7. How does the project budget support the project goals and objectives?

The project budget directly supports the project goals and objectives, with expenses related only to sash conservation. The budget was developed in consultation with several qualified conservation carpenters who have had extensive experience carrying out similar projects to high standards of quality at appropriate and reasonable cost. Both the budget and the Phase II Sash Conservation Project Manual (attached) prepared by the preservation consultant, which contains detailed conservation treatment instructions and specifications, were based on the scope of work defined in the original Window Conservation Survey (also attached). The Phase I exploratory work more specifically determined the actual costs involved in the precision sash conservation work, and helped to determine that the treatment costs were indeed justifiably substantial, and that the frame & sill conservation should be accomplished as a separate function. Given the meticulous conservation procedures required, the project is very labor-intensive, with materials comprising a small percentage of the total project cost. This is normal for woodwork conservation projects where the goal is to preserve as much original material as possible.

Sufficient matching funds are already in hand or unofficially promised, and should all be in place by May 2003.

For more than half a century, the Historical Society has been fortunate to have had dedicated local financial support, even though generally limited, and over the past ten years has earned broader-based community interest in its varied programs. However, a number of conservation endeavors in recent decades have tapped the membership and community virtually to the limit. No government or foundation funding financed either the 1994 exterior paint analysis and subsequent sand-paint restoration, or the 1994-98 maintenance program. Those projects required 5 years of special labor-intensive fund-raising events and activities, and consistent appeals to the membership and local community .At the same time, plans were being laid for an all-encompassing capital fund drive to secure private and foundation money for self-perpetuating conservation, education, building maintenance, and other endowments, and to fund the anticipated purchase of an additional building. Although launching the campaign has so far proved impossible in this community, the Board kept its commitment to the vital new building purchase. Sti1l hoping to revitalize and successfu1ly begin the campaign, the Society secured a private foundation grant to under-write a long-range strategic organizational plan. Because the MHS anticipates several long-range funding needs, the Society cannot again appeal solely to the membership and community for this substantial segment of the window project. However, as noted above, it ~ have sufficient monies on hand from contributions and private foundations ($26,000 matching funds contributed in 2002 + $14,000 promised or anticipated in 2003) to match this requested $40,000 IMLS grant. Although it is no longer feasible to rely only on sma1l local private donations to fund the substantial conservation issues inherent in this exceptional house and its finishes -of national rather than merely local relevance, an IMLS grant would act as a catalyst to encourage further member donations toward this and other conservation projects, including eventual completion of the remaining windows. We were very encouraged by last year's 3 favorable IMLS reviews, and hope that this conservation project and the Historical Society are deemed sufficiently worthy to warrant full support.

8. What are the qua1ifications and responsibilities of the project personnel?

The consultants and craftsmen selected for this project have earned solid reputations for exce1lence in the field of historic preservation, and have had extensive experience on similar projects. Selecting craftsmen of this type represents a positive Step for the MHS, which is progressively endeavoring to fo1low appropriate museum practices. IMLS funding wi1l enable the Society to achieve and maintain that standard for this important project.

Selected contractors: Resumes and letters of commitment are attached.

William R. Finch, preservation consultant, of Finch & Rose in Beverly, Mass., has participated in more than 100 projects over 20 yrs involving historic buildings throughout New England and beyond, both in private practice (since 1995) and as an architectural conservator and historical architect for Preservation Technology Associates Inc. (10 yrs) and the Massachusetts Historical Commission in Boston (6 yrs). His experience in directing large-scale conservation projects including a number of window conservation projects has provided him with expertise to determine appropriate treatments for historic buildings. He was Preservation Consultant for two major IMLS-funded projects at Gore Place: the conservation of the carriage barn and main house cupola.

David Webb, restoration carpenter from Newbury, Mass., has over 20 years experience working on nearly 100 projects for historic buildings, including scores of house museums open to the public and several window projects. In 1994-5, he worked on a major IMLS-funded window project at Gore Place that presented a number of specialized applications in the course of conserving 94 c.1806 windows. He was chosen for the Phase II work in part because he has carried out several similar large conservation projects. He and Bill Finch have worked successfully together on several previous conservation projects, including window conservation work at The Old Manse in Concord, Mass.

Patrick Maloney, painting contractor, has a reputation for excellence in creating high-caliber finishes and treatments. MHS endeavors to hire local contractors when qualified individuals exist. and this professional will bring a local identity to the project.

MHS staff:

Judy Anderson, Lee Mansion Curator, was the first full-time MHS staff person and administrative director, beginning in 1993, with 10 years of previous museum experience in various capacities. Developing an in-depth understanding of the Mansion, her roles have grown more focused on the house, its maintenance, conservation, and public presentation. **Wendy Hubbard**, Administrative Director, has guided the major MHS growth since 1998, when operations moved from the Mansion to a new office and gallery, and a permanent and changing exhibit schedule was established.

Karen Maclnnis, Collections Curator, has served as collections manager, archivist. and research professional since her arrival at the Society in 1994.

Cynthia Rockett, the Society's housekeeper, has carefully cleaned the mansion for the past 10 years, and is respectful of its fragile nature and the value of its contents.

Richard L. Tuve II, Building Chair from 1993-2000 and current MHS President. is a recently retired principal of Cambridge Seven Associates, a commercial, museum, and mixed-use architectural firm. He was employed by the firm for 32 years, and can provide wise and experienced counsel concerning contracts, planning, and development.

Peter J. Hart, MHS Treasurer, has several decades of financial experience, and is a prudent and efficient financial officer.

1768 Jeremiah Lee Mansion — Entire Window Conservation Project

Work Schedule — Phase II — June 2003 - May 2005

Phase I - October 2001 - October 2002 - ENHA matching grant funded

→ **Phase II - Sash** (14 pairs 1st & 2nd floor front principal rooms) - **June 2003 - May 2005** - pending IMLS grant funding ←

Phase II - Frames & Sills (15 windows 1st & 2nd fl. front principal rooms) - **June 2003 - May 2005** - pending MHC grant funding

[**Phase III - Sash, Frames & Sills** (remaining windows as needed - 20 small 3rd-floor + 16 pairs 1st & 2nd fl. rear & sides) - when & as funding allows]

Personnel & Project Task	June 1, 2003 → = Sash Conservation	Oct.15–Nov.30, 2003	Nov. 1 - 15, 2003 *curators↑ cnsrvtr↓* Jan.3-Mar.30,2004	April 1-15, 2004	April 15–May 1,2004	June 1–Aug.1, 2004	Nov. 1 - 15, 2004 *curatrs↑ cnsrvtr↓* Jan.3-Mar.30,2005	April 1–15, 2005	Ap.15 May1, 2005
Project Co-ordinator Order wood supply	rder yellow & →red cedar								
Preservation Contractor Sash Conservation *Progressive removal & conservation in* OFF-SITE workshop	→	Sash from windows # 4 in room 101 # 25,26 in rm.202 (window cavities covered) & return	Sash from windows # 2 & 3 in rm. 111 # 40,22,23 rm.210 (w.cavities coverd) & return after cns				Sash from windws # 5,6,7 in rm.102 # 27,28,29 in 203 (w.cavity coverd) return after cns.		
2 curators & 1 hskeepr Removal or replacemt of collections in rooms *followed by cleaning before seasonal opening*	→ **2 hrs. each** coordnatng & schedule consultation	**5 hrs.ea. - curators** (October 15) rooms 111 & 210 (move & replace collections as nec.) ↑	**5 hrs.ea.- curators** rms.210, 101, 202 (remove collctns prior to sash rmvl & panel insertion) (Frame & Sill cons.)	**2 hrs.** each curator if nec. ↑	**10 hrs.each** curators+ **10 hrs.** housekeeper 101,111,203,210,202 (hskpr clean rooms; cur. re-install colls.) ↑	**5 hrs.each - curators** rms.101,102,202,203 (progressively move & replace any collections as nec.) (Frame & Sill cons.)	**5 hrs.ea.- curators** rms.102, 203 (remove collctns prior to sash rmvl & panel insertion) ↑	**2 hrs** each curator if nec. ↑	**7 hrs.+ 7 hrs.** *see* Apr.15 '04 rm. 102,203 ↑
1 painter Int. woodwrk touch-up (*est.2 hrs. per lg.window*)	→			rm.101 202w, 210					
Preservation Contractor Erect staging for cnsvtn ON SITE Sills & Frames		**Frames & sills west half of front façade** rooms 111, 210, 201				**Frames & sills east half of front facade** Rms. 101, 202, 203			
(*Cladding boards removed; sash pairs progressively removed & plywood panel inserted during conservation of each frame & sill; sash & cladding replaced*)	*Windows # 1 & # 24 done Ph.I*	**Aug.-Spt.** Windws 2,3,22,23 rooms 210, 111 / **Spt-Oct** Wndws 21,40,25 rms.201 210,111				**June-July** Windows 4, 5, 6; 7 & 29 rms.101 102, 203 / **Aug-Spt.** Wndws 28,27,26 rooms 202, 203			
1 painter Interior wdwrk touch-up	→						rms.	102,111 203,202e	
Project Co-ordinator Final report drafted	→								May'05 20 hrs.

Shelburne Museum

Shelburne, Vermont

Project Type: Environmental Improvements
IMLS Award: $42,050
Match: $42,363
Total Project: $84,413
Museum Budget: $5,252,301

NARRATIVE

1. What is the design of the project?

Project Activities, Goals and Objectives: The Shelburne Museum is applying for funding to upgrade environmental and storage conditions in the second largest storage structure at the Museum, our 3600 square-foot Decorative Arts Storage building constructed in 1976. Decorative Arts Storage presently contains much of Shelburne's stored furniture, painted wooden artifacts, ceramics, glass, metals, small agricultural artifacts, household artifacts, oversized rugs, and three-dimensional composite objects made of various types of materials. A whole-building fan that draws outside air through filters to cool the building on hot summer days is currently the only environmental mitigation for this two-story, wood frame structure (See photographs at Appendix 10). Dust penetrating a poorly sealed building is an ongoing problem, and there have been several mold outbreaks over the past 20 years. The goal of this project is to improve environmental conditions in the Decorative Arts Storage building that currently range from 10°F and 35%RH in the winter, to 90°F and 90%RH in the summer with excursions close to 100%RH during the cool and rainy spring and fall seasons. By insulating the building, installing a reliable low-cost residential heating and cooling system or unit heaters and air conditioners, and using practical climate control methods developed, tested, and proven at Shelburne Museum over the past 12 years, it will be possible to maintain relative humidity levels between 35% and 60%, and temperature between 30°F and 75°F year-round, with gradual seasonal changes between these extremes. The proposed environmental improvement project is part of an ongoing storage improvement effort that began in 1994 when the Museum received an IMLS CPS grant to employ a conservation technician, Barbara Rathburn, to survey 67 storage areas in 33 buildings on-site and 4 off-site locations, write a long-range storage improvement plan, and begin implementing storage improvement actions. As a result of her work, Ms. Rathburn was hired by Shelburne Museum to continue storage improvements after the grant period ended. Over the past 8 years, Ms. Rathburn has improved storage conditions throughout the Museum and consolidated artifacts into 34 storage areas in 24 buildings on-site and 2 off-site locations. She was promoted to Associate Registrar in 2000, and continues to manage and upgrade storage at the Museum. Shelburne's Long Range Storage Plan is attached at Appendix 6.

Artifacts will be removed from the storage building and temporarily stored in another building with similar climate conditions. Existing windows will be covered from the inside, the building will be insulated, and a vapor barrier will be installed. Properly sized, direct-vent liquid propane gas heaters and window air conditioners will be permanently installed. The heating and cooling equipment will be controlled by the Museum's existing Johnson Control Metasys building management system. The heat will be humidistatically controlled to maintain safe relative humidity levels. Heaters will be activated to dehumidify the storage area when interior temperatures are below 72°F. Air conditioners will be activated to dehumidify and cool the storage area when interior temperatures are above 72°F. Very low humidity within a heated building during a cold Vermont winter is as serious a threat to organic materials such as wood, leather, and textiles, as is high humidity. If a building is not heated during the winter, the RH remains above 35% without adding any moisture to the air. Withholding heat from a building to prevent low RH levels is preferable to working against nature by heating the building to 70°F and using a humidifier to add moisture to the air to maintain a minimum of 35%RH.

A graphic summary of existing environmental conditions in the Decorative Arts Storage building compiled as the result of a year-long survey of temperature and humidity levels is attached at Appendix 4. Two articles by Richard L Kerschner, A Practical Approach to Environmental Requirements for Collections in Historic Buildings, and Implementation of Practical Climate Control Strategies at the Shelburne Museum provide a detailed explanation of the practical climate control measures being proposed (Appendices SA and 5B).

While the artifacts are out of the building, they will be inventoried and cleaned, documentation photographs will be taken, and artifacts will be re-housed, organized, and placed back in the upgraded area. This project will provide an excellent, real-world training opportunity for a collections management intern. Curators will also use this opportunity to evaluate artifacts stored in this building for possible deaccessjoning so that we can maximize the effectiveness of the improved storage space for the preservation of the entire collection. Conditions and artifacts in 34 other storage areas will be reviewed, and selected artifacts that could benefit from the improved storage conditions will be moved into Decorative Arts Storage. These collections management activities will be part of the Museum's match.

Staff time to be spent on project: A Collections Management Intern will be recruited to work full-time on this project for ten months. **Associate Registrar Barbara Rathburn** will spend a total of 26 days supervising the intern and reviewing artifacts stored in all 34 areas to determine how to best reorganize storage areas to maximize long-term preservation of the artifacts**. Collection Assistants** will move artifacts as required (5 persons for 2 weeks). **Painters** will paint walls and seal and paint shelving (1 person for 5 weeks). **Carpenters** will remove and reinstall shelving as required (2 persons for 2 weeks). The Museum's **System Maintenance Specialist** will assist with installation of the climate control equipment and controls (1 person 2 weeks). **Richard Kerschner, Director of Preservation and Conservation**, will spend a total of 15 days advising on selection and installation of equipment, monitoring environmental conditions, and working with Ms. Rathburn to match artifacts in storage locations museum-wide with the safest storage areas. All staff time will be credited as the Museum's matching in-kind contribution. Installation of climate control equipment by HVAC contractors will take approximately 1 week, and insulating the building will take 2 weeks.

The Schedule of Completion provides a general timeline for project activities. Much of the project work is scheduled for the summer, fall, and early winter when the weather is conducive to moving artifacts and working in the building. Buildings and Grounds staff are less available in the late winter and spring when they are building exhibits and preparing buildings for opening in May. The project is scheduled over a full year to allow some flexibility. For example, if the weather is uncooperative, it may be necessary to postpone moving artifacts back into the improved storage area until the following summer.

Intended Products: An inventory of all the artifacts stored in the building will be maintained on Past Perfect collections software.

Plans to protect objects: All objects will be removed from the building and handled by collections assistants from the Collections Management Department, and art handlers from the Buildings and Grounds crew. Everyone who handles artifacts at the Shelburne Museum is trained by conservators and Collection Management personnel. Artifacts will be properly wrapped and secured for transport to a temporary storage area with an environment similar to Decorative Arts Storage. The temporary storage area will be monitored by our 24-hour security staff.

2. What are the proposed conservation methods and why are they conservationally sound?

Efficiency: Prior to the advent of practical climate control practices and systems, museum climate control systems were notoriously inefficient and often unreliable. Expensive equipment is required to maintain the temperature and relative humidity in a narrow "safe" range of 70.F + or- 5. and 50%RH +or- 5%RH. It is expensive to operate equipment to humidify in the winter and dehumidify in the summer to such a narrow range around 50% RH. Practical climate control is based on the premise that even if it is not possible to maintain ideal conditions, preservation of artifacts is significantly enhanced by improving poor environmental conditions. Narrowing the yearly fluctuation range of 10%-90% RH in an uncontrolled building to 35%-60% will certainly help the artifacts last longer. Recent scientific materials research concludes that 35%-60% RH is safe for a wide range of artifacts made of both organic and inorganic materials (See Relatively Humidity Re-examined at Appendix 5C). The proposed project is very efficient because it would make a large storage area safe for 80% of the Museum's stored artifacts at a cost of $10 a square foot (including insulating the space). This compares with $40 a square foot for installing a conventional HVAC system in the same building. Savings in equipment costs result from using an off-the-shelf residential heating and cooling system (or direct-vent gas heating units and window air conditioners) instead of a specially designed industrial HVAC system with an air handler, hot and cold water coils, a humidifier, and a ducted air distribution system.

The annual cost of operating the system is also estimated at 25% of the cost of operating a conventional museum HVAC system ($1800 vs. $7200). (Installation and operating cost estimates were provided by Landmark Facilities Group, an engineering firm that specializes in designing environmental systems for museums.) This is because a conventional system would require heating the building in the winter to at least 55.F and using an electric steam humidifier to add humidity. The cost of dehumidifying during the summer using a conventional system is also very high since the air has to be cooled to at least 50.F to remove the moisture and then reheated to 70.F to decrease the relative humidity. Our proposed "practical" system keeps the RH above 35% in the winter by allowing the building to gradually cool and not adding heat unless the RH rises above 50%. Museum storage areas are good candidates for these practical climate control measures, since people do not have to work in the cold storage areas for expended periods of time during cold weather. Cold temperatures actually slow the deterioration of organic materials, and low temperatures have been proven safe for the artifacts such as furniture as long as they are not handled when they are very cold, since organic materials and glues could be quite brittle. A residential heating and cooling system (or window air conditioners) will cool and dehumidify the air by direct exchange as opposed to the more expensive process of super-cooling and re-heating the air. By slightly undersizing the air conditioners for the space to be cooled, one can ensure that the units run for extended periods of time in hot weather, thereby maximizing the dehumidification capabilities.

Reliability: The proposed system will be reliable because it is simple. Residential heating and cooling systems (or unit heaters and window air conditions) are ubiquitous and can be easily repaired by our system maintenance specialist. Industrial HVAC systems that include hot water heating and cooling coils and humidifiers have many more parts to fail and require an HVAC specialist to troubleshoot and repair them. Museum personnel are very familiar with the controls that will be the "brains" of this system, and the operation and monitoring will be the same as required for the other 20 buildings presently controlled by the computer-based Johnson Controls Metasys building management program. Resulting environmental conditions will be monitored using the Preservation Environmental Monitor and the data will be analyzed using Climate Notebook software. Shelburne Museum is participating in the beta testing of the PEM Monitor and Climate Notebook software, both of which were developed by the Image Permanence Institute. We are pleased and excited by this new museum environment monitoring system and believe that it will provide data in an easily understandable format that can be readily shared across the museum field.

Innovativeness: Shelburne Museum has led the museum field in the implementation of practical climate control methods, and we continue to develop and perfect new configurations. As the result of a museum-wide environmental improvement project implemented from 1992 to 1996 and sponsored by an NEH Preservation and Access grant, Shelburne Museum has many different configurations of climate control systems, from humidistatically controlled ventilation to complete HVAC systems utilizing ground-source heat pumps (See articles at Appendix 5). We know the proposed practical climate control system will work well and maintain the conditions cited because we have been successfully operating similar systems in 8 of our collection buildings for

the past 7 years. The configuration of the practical system proposed for Decorative Arts Storage results from a successful pilot project using similar equipment to control the environment in a 450 square-foot exhibit room for the past 10 years. A larger scale climate control project employing a unit heater, window air conditioner, humidifier, and dehumidifier, all operating on their built-in controls to maintain a safe climate in a 1000 square-foot textile storage area, has been operating successfully for the past 5 years. The innovative aspects of the Decorative Arts Storage project are the use of an efficient residential heating and cooling system (or window air conditioners) to reduce relative humidity during the summer in such a large space, and the control of such equipment by a centralized digital control system (Metasys) already in place at the Museum..

Conformity to currently accepted conservation methods: Although it is sometimes difficult to be innovative and conform to accepted conservation methods at the same time, the proposed project does both. The use of humidistatic heating to reduce high RH in cool damp weather, and the practice of reducing temperature during the winter to maintain safe RH levels have been widely employed climate controlled methods in England, Canada, and northern Europe for over a decade and are rapidly gaining general acceptance in the US. The innovative use of window air conditioners and centralized digital controls described above have been thoroughly tested at Shelburne and piloted on small and medium scale projects. In addition, a new Collections Management and Storage building constructed at Shelburne in 2000 has a 5000 square-foot horse drawn vehicle storage area that is controlled to 34%-55%RH year-round using humidistatically controlled heating and ventilation. These practical climate control methods work best when employed in a tightly sealed building that is well insulated. The proposed insulating and weather-stripping of the Decorative Arts Storage building and installation of a good vapor barrier material is another aspect of this project that conforms to accepted conservation standards.

Safety: The project also conforms to the wider temperature and humidity standards for general collections that have gained wide acceptance over the past decade: a minimum of 35%RH in the winter and a maximum of to 60%RH in the summer with seasonal ramping between those values. It is also widely recognized that it is preferable for most artifacts to be cold and at a safe RH level (35%) than warm or hot and very dry during cold weather. Scientific data has supported these wider standards (Appendix 5C). However, conservators at Shelburne are well aware that there are certain materials and artifacts that do have more stringent environmental requirements and that storage and exhibit areas for such artifacts may require more elaborate climate equipment and controls. For example, the Decorative Arts Storage areas will not be safe to use for paintings storage because of the low temperatures that will be required during the winter to maintain safe relative humidity levels. The only possible human safety issue with this project could be the venting of the exhaust from the LP gas heaters or furnace. Qualified installers will be used for all aspects of this project and all building codes will be closely followed.

3. What is the object(s) that is the focus of this project.

Types, numbers, and materials of the collections: The Decorative Arts Storage area presently contains approximately: 200 pieces of furniture including case furniture, chairs, tables, and trunks, 3000 pieces of glass and ceramics, 30 oversized rugs, 2 boats, 20 saddles, 300 small agricultural artifacts, 300 railroad objects, a large stain glass window, 40 hair wreaths, and other miscellaneous artifacts. However, selected artifacts stored in 34 storage areas throughout the Museum will benefit from this project because of the museum-wide storage reorganization that will be possible after 3400 square feet of additional climate controlled storage space is created. By boxing small artifacts and possibly deaccessioning some of the large furniture, more storage space will be created in this climate controlled area. Selected artifacts that are presently stored in environmental conditions that are significantly worse than 35%-60% RH will be moved into this improved area. This includes metal and wood folk art weathervanes, painted wood folk art trade signs and cigar store figures, and baskets. The Museum also has approximately 4000 square feet of paintings, paper, and artifact storage that is temperature and humidity controlled to the higher standards of 60°F to 75°F and 40% RH to 55% RH year-round. Some of the decorative art objects currently stored in these areas that do not require our best environmental conditions can be safely moved into the improved Decorative Arts Storage space, thereby creating more space in our most highly controlled storage areas for our most sensitive artifacts.

Relevance to the Museum's overall collection: The Shelburne Museum was founded in 1947 by Electra Havemeyer Webb, a pioneer collector of American folk art, to preserve and exhibit her extensive holdings of American and European art and artifacts. The Museum's collection of some 150,000 objects, displayed in 37 buildings, is known for its breadth, depth and quality (See Shelburne Museum Description Sheet and Visitor Guide at Appendix 11 for a more detailed description). The artifacts presently stored in Decorative Arts Storage range from important objects that are not presently exhibited for thematic reasons, to redundant low-quality objects waiting deaccessioning. An example of the important objects is the largest collection of French Canadian furniture in the United States (over 40 artifacts) that has been exhibited in the past and will certainly be exhibited in the future.

Relevance to the Institutional Mission: Shelburne's mission is "to broaden our audience, engage their curiosity, and give them an extraordinary Museum experience." Artifacts in storage play an important part in the creation of new, fresh exhibitions that are essential to fulfill this mission. This storage improvement project will enable the museum to directly fulfill two of its guiding principles; specifically, "preserving, interpreting, and making broadly accessible the Museum's collections," and "achieving the highest standards of professionalism."

Relevance to the local, regional, national and international community. It is Shelburne Museum's intent to make its collections broadly accessible to its 150,000 visitors, scholars, collectors and students each year. Improved storage conditions are essential if stored artifacts are to be preserved for inclusion in future exhibitions and for study by scholars who research and write about the collections. Two significant pieces of furniture were recently "discovered" by scholars during a curatorial survey of the Museum's furniture collection. A table base made in Boston around 1690 is one of only three surviving oak square table bases from all of British North America. A William and Mary-style easy chair is described as one of the two earliest American easy chairs ever made (probably 1695-1710). These artifacts are representative of the quality of Shelburne Museum's collections both on exhibit and in storage.

4. How does the project relate to your museum's ongoing conservation activities?

Summary of the Museum's general housekeeping and day-to-day maintenance activities: Two collections assistants (CA's) are responsible for the housekeeping "behind the barriers" in buildings that contain collections. Artifacts are dusted as required, which is once or twice a week during the open season. Floors in collection buildings may be vacuumed several times a week, depending on the traffic and the weather. CA's are trained to recognize insect and rodent damage and are an important part of the Museum's integrated pest management program. Collections assistants are supervised by the Director of Collections Management and trained by the Museum's conservators, and the conservators are always available to consult on housekeeping procedures and techniques. CA's are encouraged to attend seminars and training courses on museum housekeeping, artifact handling, and pest management. Housekeeping and day-to-day maintenance activities will not be significantly effected by this project since cleaning of this storage area presently requires only a few days a year. The improved storage will ultimately be easier to clean and maintain, especially since the insulating and tightening of the building will significantly reduce the dust that collects on the large artifacts and essentially eliminate dust on the small objects in boxes. The improved environment will also prevent mold outbreaks, which, although infrequent, require extensive clean-up actions.

Previous and current conservation activities over the 20 years that modem conservation has been active at Shelburne Museum are detailed in Shelburne Museum's **Long Range Preservation Plan (LRPP)** attached at Appendix 3. The conservation staff includes 2 full-time objects conservators planning and implementing preventive conservation and conservation treatment actions. Their efforts have been complemented by paintings, paper, objects, furniture, sculpture, and textile conservators, supported by 27 grants from IMS, N EA, NEH, N MA, Kress Foundation, Luce Foundation, and Mellon Foundation for survey and treatment of artifacts, storage and environmental improvements, and conservator training. A 6-year, $1.2 million environmental improvement project, sponsored in part by an NEH grant, and completed in 1997, significantly improved environmental conditions in 27 collections buildings while preserving the historic structures that house the collections. Conservators and Collections Management personnel examine and prepare artifacts for national and international loans and recently assisted with installation and de-installation of 85 major folk art objects that traveled to 5 museums across the nation. Two years ago, the Museum completed construction of a 10,000 square foot collections management and storage facility that utilizes conservation heating and ventilating in the carriage and large artifact storage area to maintain preservation conditions with low operating and maintenance costs. This facility also includes 1000 square feet of high quality, tightly controlled storage. Current conservation activities include both preventive conservation and treatment projects. Shelburne Museum is in the third year of a five-year project sponsored by a grant from the National Endowment for the Humanities to upgrade fire and security detection systems, update building wiring, and install new exhibit lighting in 6 of the Museums oldest buildings. This five-year project requires sequentially removing all the artifacts from each project building to allow access to building structures for installation of the various systems. It also presents an excellent opportunity for the curators to reinterpret and upgrade exhibitions in these buildings that include the Variety and Hat and Fragrance Units. Two conservators are treating 260 dolls in preparation for the reinterpretation and reinstallation of the doll and toy exhibit in the Variety Unit in 2004. A third-year conservation graduate intern is surveying Shelburne's collection of toys and automatons in preparation for treatment of selected artifacts to be included in the same exhibit. Conservation survey and treatment work will soon begin on Shelburne's collection of dollhouses and miniature interiors in preparation for their reinstallation in the Hat and Fragrance Unit in 2005.

Accomplishments of previously awarded grants (including IMLS) are described in Appendix 9. In addition, 31 graduate interns and 7 pre-conservation interns have participated in formal Summer Work Projects or internships. Conservation survey and treatment projects have significantly improved the overall condition of Shelburne's collections of paintings, works of art on paper, furniture, folk sculpture, carriages and sleighs, bedcovers, floor coverings, samplers, hatboxes, stumpwork, and dolls.

Implementation of recommendations from general conservation surveyor other prior surveys, and how the project ties into the Museum's long range conservation plan. Upgrading storage areas to include environmental control and the construction of new climate controlled storage were identified as a high priority in the general conservation survey conducted in 1980 by 4 prominent conservators (see Appendix 2 of the LRPP for further discussion of the general survey). A Long Range Conservation Plan was originally written to address recommendations resulting from this survey. It was changed to the Long Range Preservation Plan (LRPP) in 1998 to address a broader perspective that included collections management and archives preservation requirements. Since the LRPP addresses all of the recommendations made in the general survey, a copy of the lengthy general survey is not included. Implementation actions completed since 1982 are summarized in Appendix 1 of the

LRPP. This project is one of the highest priorities in the Museum's Long Range Preservation Plan, and if funding is received, it becomes the highest priority.

Why this project is the Museum's greatest collections care need. The Shelburne Museum has many pressing collections care needs. As explained in Appendix 2 of the Long Range Preservation Plan, we take a multi-path approach to addressing collections preservation requirements. Managing and upgrading storage has been a very high priority at Shelburne for many years, as evidenced by the hiring of a conservation technician 8 years ago to concentrate on all aspects of storage. It is a testament to our efforts to improve storage that the Decorative Arts Storage building that was considered one of the best storage areas at Shelburne 20 years ago is now one of our least desirable storage areas. This is not because the storage conditions in Decorative Arts Storage have deteriorated, but because most of the storage areas in leaky barns, hot attics, damp basements, and cramped closets have been upgraded or replaced with better storage areas. Decorative Arts Storage is one of the last major storage that requires improvements, and very significant improvements can be made efficiently and relatively inexpensively.

Shelburne Museum's overall financial commitment to conservation is extensive for a museum of its size. Two full-time conservators direct and supervise interns, grant-funded advanced interns, contract conservators, and volunteers. The Director of Preservation and Conservation reports directly to the President/CEO. A separate Collections Management Department was established in 1999 to handle many of the collection care activities, freeing the Conservators to concentrate more directly on conservation treatment, museum-wide preventive conservation actions, and conservation training. The list of total grants received over the past 18 years at Appendix 9 indicates not only the amount of money granted to the Museum, but also the dollar value of the Museum's contribution required to complete these project. These expenditures are in addition to the regular department budget of $88,250 for FY2002.

5. What are the anticipated benefits of this project.

The benefits of this project for Shelburne Museum and the Museum's audience were previously discussed in Paragraph 3 above. This storage improvement project has the potential for significant benefit to the museum field, especially historic house museums. It is a prototype for retrofitting a low-cost existing structure, such as a garage or barn, using insulation and inexpensive, low-tech climate control equipment that will also operate at a one-quarter of the cost of a conventional HVAC system. Most importantly, environmental conditions maintained will be safe for the majority of collection artifacts held by historic house museums. This project also provides a significant training opportunity for a new museum professional. Immediate results and benefits of this project will be disseminated to museum audiences through behind-the-scene tours and classes such as Elderhostels. Over the long term, visitors will enjoy artifacts on exhibit at the Museum and on traveling exhibitions that are well preserved because of the improved storage conditions. Dissemination to the museum field will be through classes and workshops at AASLH, AIC, and regional museum organization conferences, as well as possible publication in professionals journals similar to the articles at Appendix 5.

6. How will the applicant ensure that ongoing museum functions are not inhibited by these project activities? Most of the Museum's match will be in the form of in-kind contributions of labor. This project has several labor-intensive sections that will be addressed as indicated so as not to inhibit ongoing museum functions. (1) Moving, inventorying, photographing, cleaning, and re-housing the artifacts. The Museum will recruit a collections management intern for this one-year project to do most of these tasks. The Associate Registrar will supervise the intern and assist as required. This project provides an excellent training opportunity for a beginning museum professional interested in collections management and preventive conservation. Housing and a stipend will be provided. (2) Insulating the structure -This task will be contracted to a professional firm that has insulated other buildings at Shelburne Museum. They can perform their work in a few weeks to limit disruption. The Decorative Arts Storage building is not located on the grounds of the Shelburne Museum proper, but across the street in the service area, so visitors to the Museum will be unaffected by this project. (3) Deaccessioning of selected stored artifacts -Curators and collections management personnel are involved in ongoing routine deaccessioning efforts. These efforts are already focusing on Decorative Arts Storage and will continue as part of this project. A portion of the Associate Registrar's continuing storage improvement efforts will be committed to this project as part of the Museum's in-kind match. The project has been designed so that other Museum staff members can contribute to this project without inhibiting ongoing Museum functions. For example, the Museum carpenters are capable of insulating the building, but the insulating is being contracted so that other priority carpenter projects are not inhibited. Project implementation is spread out over a one-year period to enable project participants to take full advantage of seasonal lulls in a usually hectic schedule.

7. How does the project budget support the project goals and objectives?

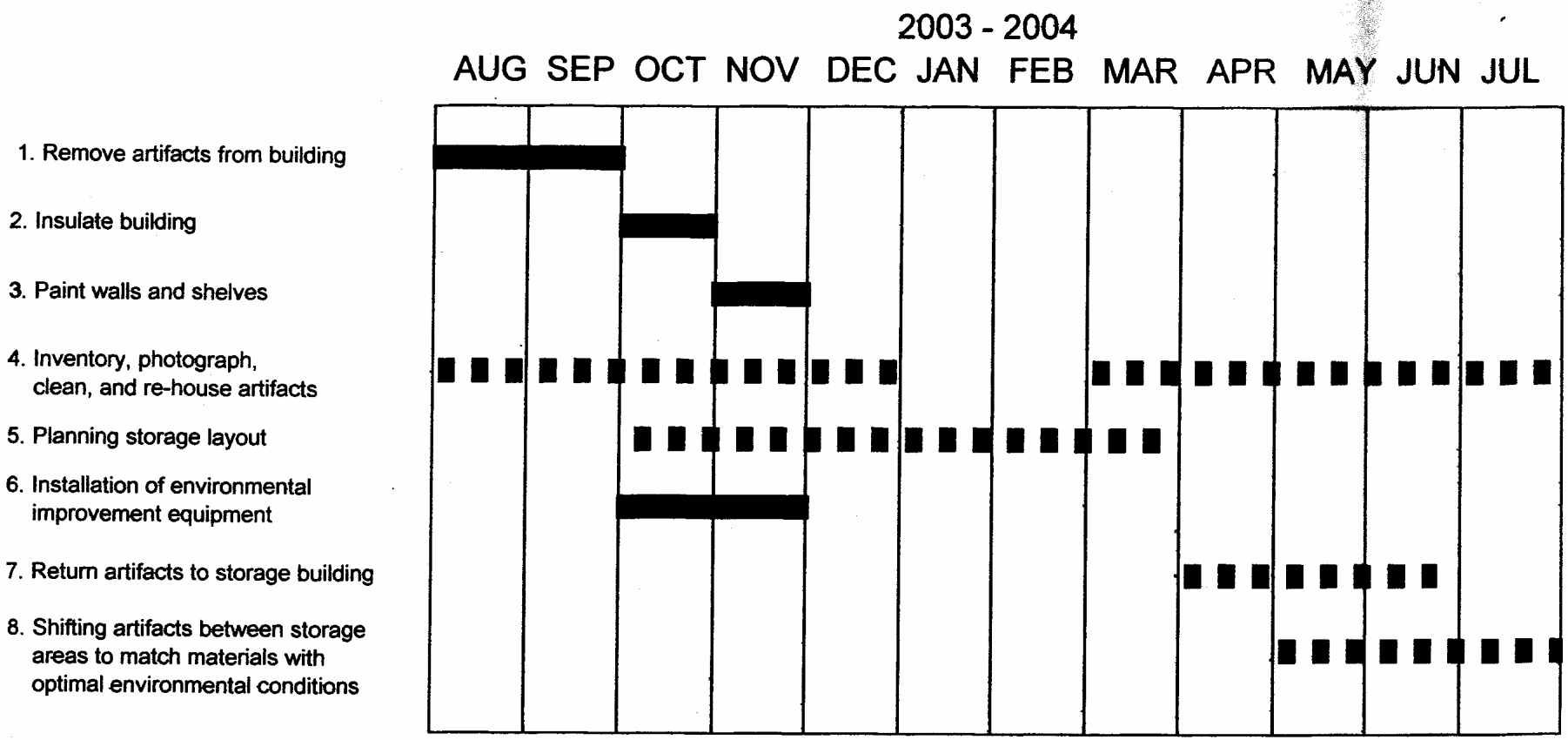
How the budget was developed and cost determination: About half of the budget is for the purchase and installation of climate control equipment and insulating the structure. Cost estimates were obtained from contractors who specialize in these tasks and have satisfactorily completed similar projects at the Museum (Appendix 7 and 8). Contractors' estimates have been rounded up to allow for some price increase over the next 18 months. These costs are matched by Shelburne Museum personnel providing labor and expertise to: design the systems; supervise installation; plan storage reorganization to safely match artifacts to

environmental conditions; move artifacts; inventory, clean, photograph and re-house artifacts; move and paint/seal shelves; install and test equipment; and monitor environmental conditions. **Why the costs are reasonable and appropriate, and cost factors involved in selecting personnel, materials and equipment and scheduling:** The costs of the proposed practical climate control upgrades are one-quarter the cost of conventional HVAC equipment, as are the estimated continuing operational costs. Another significant saving is realized by the use of valuable in-house expertise to design and operate these systems, and monitor the resulting environment. The cost of hiring an outside museum environment expert or engineer to design and advise on this project could be prohibitive.

8. What are the qualifications and responsibilities of the project personnel?

Associate Registrar Barbara Rathburn holds an MA in Museum Studies: Decorative Arts/Conservation from the Fashion Institute of Technology. She has been in charge of storage planning and upgrades at Shelburne Museum since 1994 and has advised other museums on storage issues. Ms. Rathburn was the Conservation Technician hired to conducted a one-year IMLS-sponsored storage improvement project (1944) to re-house and organize objects in several storage areas at the Museum. She wrote and maintains Shelburne's Long Range Storage Plan. Ms. Rathburn will directly supervise and work with the Collections Management intern to process the artifacts that are removed from Decorative Arts Storage. She will locate on-site temporary storage for the displaced artifacts and coordinate and supervise all artifact moves. She will review artifacts in all 34 storage areas and, in consultation with the conservators, match artifacts to storage areas that best meet their environmental requirements. **Director of Preservation and Conservation and Project Director Richard Kerschner** will design the system, consult with local HVAC engineers to select the equipment, oversee installation and testing of the equipment, and monitor and maintain the building environment. Mr. Kerschner holds an MA in conservation from the Cooperstown Graduate Program. He established conservation at Shelburne Museum and has directed preventive conservation and conservation treatment efforts at the museum for 20 years. He has conducted extensive research and development on practical climate control systems and has published and lectured extensively on that subject. He consults and advises on museum environment for other museums and historic houses on a regular basis. **The Collections Management Intern** will prepare artifacts for moving out of the storage area and indicate temporary storage destinations for specific objects. The intern will inventory the artifacts and take documentary photographs. He/she will clean dust from the artifacts, rehouse small objects, and properly label boxes so artifacts can be easily located. The intern will reorganize the upgraded storage area and direct placement of artifacts back in the building. The intern will be a graduate of a museums studies program with an interest in pursuing a career in collections management or museum registration. A job description for this position is attached at Appendix 1.

Schedule of Completion
Decorative Arts Storage Environmental Upgrade



Nichols House Museum

Boston, Massachusetts

Project Type: Environmental Improvements
IMLS Award: $11,561
Match: $14,100
Total Project: $25,661
Museum Budget: $88,000

Nichols House Museum Boston, MA
IMLS Conservation Support Grant Application 2002
1. What is the design of the project?
(A short history of the Nichols House Museum is given on page 7.11 of the application form)

In response to its 2000 Conservation Assessment Program (CAP) report, the Nichols House Museum (NHM) will address the most critical conservation priority -installation of ultraviolet (UV) filtering panels on 36 windows where collections are housed. Thirteen windows are 36"w X 32"h -three-over-three construction; 23 windows are 36"w X 62"h - six-over-six construction. The goal of the installation of the UV panels is to reduce ultraviolet light in collection display areas and prepare one area for collection storage. Although this procedure will not reverse damage already done to textiles, prints and wood finishes in the house, it will stop further damage.

In June 2003 the Nichols House will work with conservator Robert D. Mussey, Jr. and with James Maloof, specialist in UV blocking techniques, to review product information and installation requirements. Each window will be measured separately for exact fit. Acrylite OP-3 acrylic panels, with embedded UV filtration, will hang suspended from two small cup hooks set in the moulding of the windows. On the 23 larger windows, there will be two panels, one for the upper sash and one for the lower sash. Each panel will be suspended from cup hooks. Mr. Maloof, with the approval of Mr. Mussey, suggested using two panels on the larger windows to prevent any buckling or distortions that might take place if a single large panel were installed.

The panels will not be screwed into the woodwork; they will hang loosely. Small props will be installed on the bottom and sides of the panels to keep the panels from having direct contact with window frames. Air will circulate freely between the window and the panel, thereby preventing condensation from forming between panels and windows. Preventing condensation is of particular concern since it would cause the wooden window sashes to deteriorate. In his CAP report Mr. .Mussey also recommended the panels have a neutral-gray tint in order to decrease visible light as well as ultraviolet light. Plexiglass suppliers informed us that tinted, UV filtering acrylic panels are not available; therefore, we will install acrylic panels with ultraviolet filtering only.

Prior to installing the panels, Nichols House volunteers and members of the board of governors will work under the guidance of Dawn Kimbrel, part-time collection management consultant of the Nichols House, to safely move and store artifacts to protect the collection and to create an open, efficient work space for the window contractor. Materials will be purchased to insure appropriate handling and storage. (Attachment A)

Restoration work will be done on those windowsills and sashes that require it. Windows will also be thoroughly cleaned inside and out. This work will be done by Pingree Painting Company, a long established painting firm in this community. Mr. Jason Pingree has worked with historic properties, many of them part of the Beacon Hill National Landmark Historic District, for over 20 years. (Attachment B)

Light readings will be taken prior to the installation of the panels. As a test of the appropriateness of the material and the installation technique, only two windows will be treated initially. The goal in treating only two windows is to determine whether there will be

a problem with condensation between the acrylic panels and the windows. The test windows will be monitored for four months before proceeding with other windows. This period of time is ample to reveal any inherent problems in the acrylic panel method. Also, we will be able to see how inside shutters function with the panels and we will be able to assess the aesthetic impact of the panels in the Nichols House. We are submitting an architect's drawing of a window in order to demonstrate the relationship between the window sashes, the acrylic panels and the shutters. (Attachment C)

If this prototype is successful after the four-month trial period, we will proceed with the installation of panels on the remaining windows. The final installation step will take three months, ending in June 2004. The UV filtration capabilities of the panels will be monitored and evaluated every three months.

We anticipate Mr. Mussey will spend one full consulting day on the project. He has indicated that the full day's consulting expenses will be divided incrementally over the length of the project, since he will be working in a consulting capacity only. Mr. Maloof will provide service for three full days for his oversight of the installation. Mr. Maloof has included his fees on this project in the estimate from American Window Film. The project will require about 5% of the executive director's time for the duration of the project. Volunteers will provide 75 man-hours to move objects; store them; cover furniture to guard against dust; remove and reinstall furniture and carpets as needed; and remove and reinstall draperies.

The schedule of completion of our project is appropriate. To provide one year for the installation and monitoring of the test windows; the fabrication and installation of the remaining 34 windows and the first evaluation of the UV filters, is reasonable. This is a finite project in which the bulk of the work, the cutting of the acrylic panels to size, taking place off-site.

To limit disruption to the museum, we will work in one room at a time. Doors allow each room to be closed to the public. Large pieces of furniture will be covered; smaller, decorative pieces will carefully be moved out of the way of the installers. Paintings and prints will be removed from the walls. Heating registers and return vents will be covered and sealed so that no dust will travel from room to room. This work will be done by volunteers and the executive director with support from the collection management consultant.

2a. What are the proposed conservation methods and why are they conservationally sound?
After having cleaned, primed and painted any window sills or sashes that are in need of repair, we will install acrylic panels with UV filters. This treatment will reduce both the ultraviolet light and some of the visible light from reaching the interiors of the museum. This method of creating UV panels is one that has been recommended by our conservator and has demonstrated to be effective in several properties of the Society for the Preservation of New England Antiquities (SPNEA). We have seen the installation of this method at the Harrison Gray Otis House, a SPNEA property located within Y2 mile of the Nichols House Museum. This method has been suggested because it is considered much less intrusive to the authentic fabric of the museum than applying UV filtering film directly onto the windowpanes.

2b. No training component is part of this proposed project.

3. What is the object (s) historic structure (s) or specimen (s) that is the focus of the project?

Types and Number of objects and materials in the permanent collection of the NHM: **Textiles = 100** including rugs, bed hangings, upholstered furniture, tapestries, table linens, draperies, needlework. **Art = 150** including prints, photographs, oil paintings, sculpture. **Wooden Furnishings = 95** including furniture, mirrors, and clocks. **Porcelain and glass = 300. Pewter and silver = 250. Books and magazines 1,000. Wallcoverings in two rooms. The house itself is treated as an artifact.**

The focus of the project is the collection of interior furnishings, including furniture, wall coverings, textiles, paintings, and prints of the Nichols House Museum and the structure itself, which we treat as an artifact, a part of our collection. There are eight rooms in the NHM, only five rooms (each approximately 15' X 20') of the house presently contain the museum' s permanent collection of domestic furnishings. Each room contains three to five oriental carpets, draperies for windows, upholstered furniture or bed hangings. Each room has artwork, whether prints, photographs or paintings, or sculpture. Wooden furniture spanning a 250-year period tightly fills the rooms. Porcelains, glass, silver and pewter objects decorate every horizontal surface. These interior furnishings, along with the Charles Bulfinch designed row house in which they are displayed, comprise the entire collection of the Nichols House Museum.

As recommended by our CAP surveyor, all interior shutters are kept completely closed when the museum is not open for tours. The shutters are opened for tours because the electric lighting in the house is very dim. We have kept the original lamps used by Rose Standish Nichols that provide little light when we conduct tours. However, even though we follow the practice of keeping the shutters closed, damage to the collection is quite evident.

Prints have been brought to the Northeast Document Conservation Center in Andover, Massachusetts for a condition evaluation. Other collections have not as yet been evaluated for damage; however, a simple visual survey of the surfaces of the upholstered chairs, needlework done by the Rose Standish Nichols, oriental rugs, bed hangings, books, and finishes on wooden furniture indicates that damage that has occurred.

The mission of the Nichols House Museum is to preserve and interpret the home and life of Rose Standish Nichols and her times; to educate and enhance the experience of visitors to the museum and to Beacon Hill. Preserving the interiors of the house from the damaging effects of sunlight is, therefore, wholly in accordance with the mission of the institution. Without interiors in good condition, interiors that reflect the domestic life of Boston at the turn of the last century, we would not have a reason to keep our doors open as a museum.

Our collection is important to our immediate community as well as our visitors from around the world because it provides a window to the everyday life of Bostonians of a particular era. All furnishings are original to the Nichols family or specifically to Rose Standish Nichols for whom the museum is named. Every effort has been made to maintain the house just as its owners did in the early 1900'5, a bustling period in Boston history, when Beacon Hill was home to many artists, writers, musicians and social activists.

4. How does the project relate to your museum's ongoing conservation activities?

In the past two years, the NHM Museum has undergone the CAP survey and the Museum Assessment Program (MAP I) survey. Both assessments have indicated that controlling the ultraviolet light in the museum is the highest conservation priority for the Nichols House to address. The installation of UV filters on the windows is of prime importance in both the short term and long term conservation of the collection of the NHM. Without the installation of the UV window filters, all other conservation efforts will be in vain. Until the issue of light control is addressed, preservation work on all other aspects of the collection cannot be started. Textiles, prints, books, wallpaper and furniture finishes all require that the light problem be addressed first.

Since December 2000, the Nichols House has initiated or completed the following preservation work indicated in our 1- 3 year goals in our CAP Report: (1) We have received a pre-planning grant from the Massachusetts Historical Commission (MHC) to produce detailed drawings and specifications to rehabilitate two rear sheds attached to the main building in 1832. We are working with our architect on the development portion of the shed rehabilitation project. The larger of these two sheds is being planned as an archival storage facility for the museum. (2) We have received a grant from the National Endowment for the Humanities (April 2002) to purchase and install environmental monitoring equipment to accurately record fluctuations in relative humidity and temperature of each of the rooms of the house. We anticipate this equipment will be in place by December 1,2002 and that our statistics gathering for the next two years will be fully underway shortly thereafter. Once these findings are interpreted, we will take steps to improve the ambient climate of the museum. (3) We have taken many prints in our collection to the Northeast Document Conservation Center to be surveyed. The evaluations indicate UV damage to many of the prints. (4) We have done a first phase of cleaning of all wooden furniture in the museum. (5) We have discontinued the rental of the museum for non-museum related functions. (6) We have tied ribbons on all collection chairs to prevent their use.

With information from a video on historic house maintenance produced by SPNEA, from the publication *Caring for Your Historic House*, from interviews with colleagues, and from workshops attended on historic house maintenance, we have developed a system of weekly, monthly and yearly maintenance. We address everyday problems from dust accumulation to the careful cleansing and light waxing of wooden surfaces. One professional cleaning person cleans the entire collection on a weekly basis. He ,also works at several other historic houses in Boston. Together with the executive director he works on monthly projects such as cleaning and dusting framed prints and cleaning their glass, cleaning all porcelain, and carefully dusting books.

5. What are the anticipated benefits of this project?

Among the anticipated benefits will be the cessation of further light damage done to the permanent collection of the museum. Although significant light damage has already taken place, this improvement will significantly reduce further damage.

Addressing the important issue of UV light control will ultimately reflect the importance of the mission of preservation for the Nichols House Museum to our community. Approaching the problem of UV damage in the most professional manner possible will encourage the immediate community to take the issue of preservation more seriously. Having worked

toward the stabilization of the collection will result in our visitors, both domestic and international, having a better understanding of our mission as a historic house.

Another benefit will be the education of museum trustees, staff, and volunteers about the conservation of the interior furnishings of the historic house. Renewed conscientiousness and professionalism on the part of the staff and the board of trustees will likely insure additional financial commitment from our donors.

We also plan to invite three conservation experts to conduct a panel discussion about the effects of UV light on objects. We will invite a textile, print and furniture conservator. This discussion will take place after the acrylic panels have been installed. We will invite the public to attend free of charge. This is of interest to both private collectors and to homeowners with prized antiques, prints and textiles who would like to have more information about preventing UV damage. This public aspect of the project will benefit the community, and the NHM. The museum will increase its visibility as a resource for the community.

6. How will the applicant ensure that ongoing museum functions are not inhibited by these project activities?

Visitation and programming: The planning and measuring for the window UV shields would be accomplished when the museum is closed to visitors. The museum is closed on Mondays. The installation of panels to 34 windows is scheduled for March and Apri12004. The NHM: is open three days per week during those months, thus allowing for greater flexibility in planning the contractor's installation schedule. The fabrication of the panels would be done off-site, not disturbing the functioning of the museum. As installation work begins and progresses, each room can be closed off. Tours can continue, with only one room at a time closed to the public. We have found in the past that visitors are very interested in preservation projects. To allow them to view the installation and to inform them of the need for appropriate conservation in historic houses fulfills an aspect of the educational mission of the museum.

Financial: The board of governors realizes that careful preparation work has to be done to many of the windows before the UV panels can be installed. The rest of the museum's contributed match to the UV panels is personnel/volunteer time -in-kind. No funds are being diverted to this project that would otherwise be going to other conservation concerns. The completion of this project will enable us to proceed on preservation projects such as addressing the rehousing of our prints and textiles that have suffered from ultraviolet damage.

Administration: Volunteers will help the executive director during this period so that administrative functions can continue efficiently.

7. How does the project budget support the project goals and objectives?

The budget of $25,661 was developed by analyzing the market rate of materials and labor for installing the UV panels. Consultants' fees were taken into consideration. Staff time and volunteer man-hours were also calculated. Appropriate moving and storage materials for permanent collection objects will be ordered. The proposed budget allows for 36 windows of the NHM to be treated with UV filtering acrylic panels. Project costs were based on estimates for the material and labor provided by the project consultant.

The work of measuring, producing the plans, fabricating and installing the protective UV panels is a discreet project. Once these conservation tools are installed, we do not anticipate ongoing costs. We will incur some additional costs since window cleaning will be more labor intensive with the removal and reinstallation of the panels.

The cleaning of the panels will be an extra expense in the future since cleaning solutions that do not damage the acrylic panels will have to be used. An evaluation of the UV filters will be done every three months by staff members. Thus, the proposed budget in this proposal will address the cost of the entire project with additional expenditures only for cleaning products. The project budget, therefore, will support the project goals and objectives in their entirety.

8. What are the Qualifications and responsibilities of the project personnel?

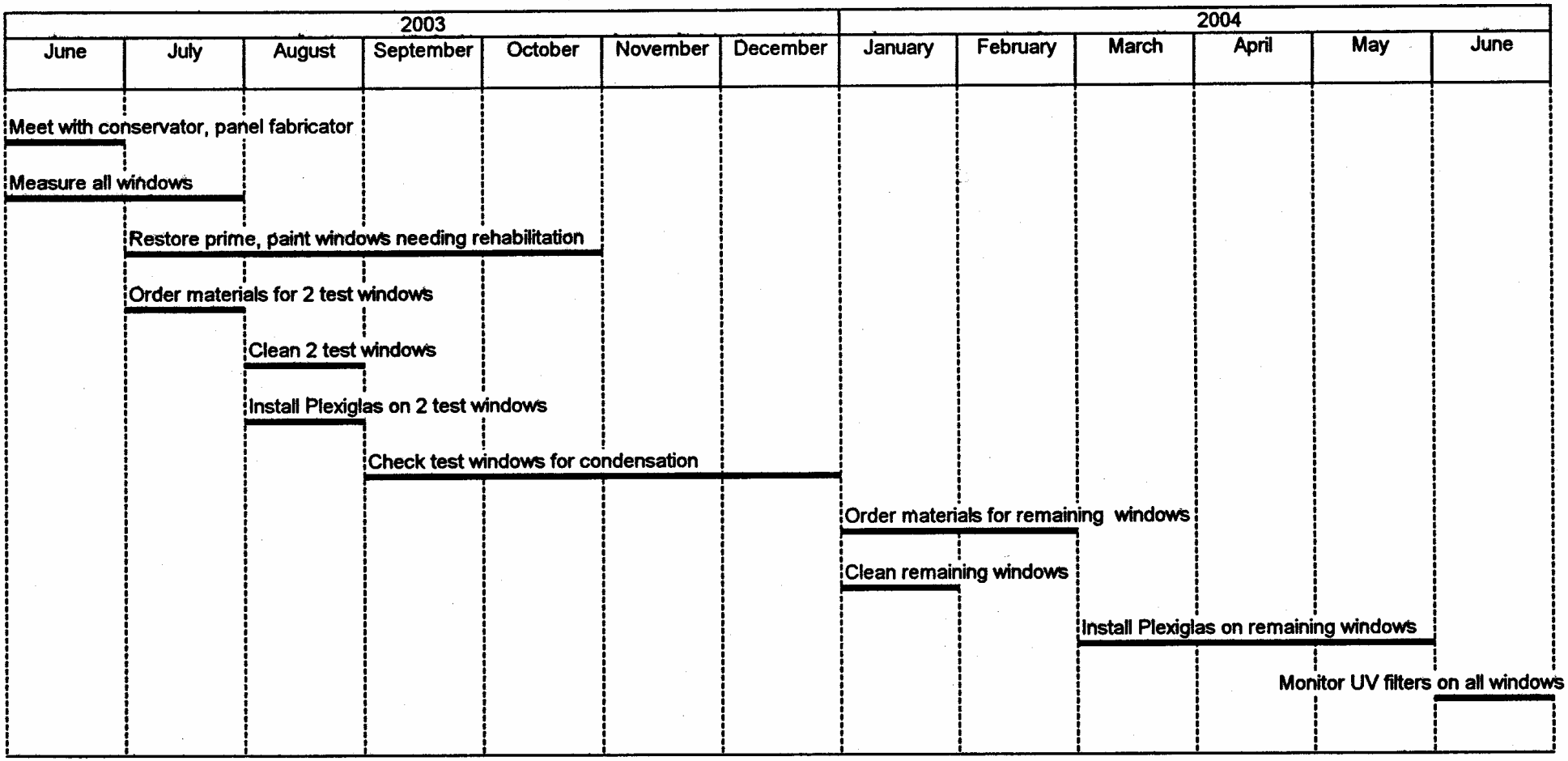
Dawn K. Kimbrel: Ms. Kimbrel is currently a collection care specialist at the Museum of Fine Arts, Boston. She is a museum professional committed to advancing best practices and developing ways to use collections to explore cultural history and provide access to researchers, students, and the public. Ms. Kimbrel has experience in project management, collection care, exhibit planning and publications. Ms. Kimbrel will prepare object transport and temporary housing materials, and offer object handling suggestions to the volunteers.

Robert D. Mussey, Jr.: For the past 30 years, Robert Mussey has worked in the field of conservation as a well-respected conservator, author, researcher and lecturer. He has worked with over 100 museums, historic houses, as well as private clients in the area of environmental improvements and object treatment to protect collections in the long term. He has received recognition for his numerous articles on American furniture and is currently the primary researcher and author of a forthcoming museum catalog on the furniture of John and Thomas Seymour. Mr. .Mussey will consult directly with the light control specialist working on the project. Mr. Mussey has developed the specifications for the fabrication of the UV filtering panels and has agreed to oversee the installation of the panels and evaluate their effectiveness.

James Maloof: For the past 10 years, James Maloof has worked for New England Sun Control as the consultant for the installation of products for the reduction of ultraviolet light in historic properties. He has a broad knowledge of materials available for controlling UV light and has worked in this capacity at a number of museums and historic sites. Among his past clients have been the following: the Fogg Museum, Harvard University, the Museum of Fine Arts in Boston, Gore Place and several properties of SPNEA.

Flavia Cigliano: Flavia Cigliano has worked in museum management for the past six years overseeing preservation and restoration projects funded by the Massachusetts Historical Commission. During this period she has attended numerous workshops and lectures on conservation methods presented by SPNEA, the Massachusetts Historical Commission and the Bay State Historical League. As the only full time staff member, Executive Director Flavia Cigliano will work directly with the conservator and trades people to oversee the project, monitor the effectiveness of the UV filtering panels on a regular basis and insure compliance with the reporting specifications of the IMLS.

Schedule of Completion



Nichols House Museum
Boston, MA
Conservation Project Support

University of California, Davis Arboretum

Davis, California

Project Type: Detailed Condition Survey
IMLS Education Award: $10,000
Total Grant Award: $46,392
Match: $48,111
Total Project: $94,503
Museum Budget: $687,707

$36,392 to conduct a detailed condition survey of the oak collection, including environmental conditions and status of individual specimens. $10,000 to develop an interpretive sign system for the oak collection that will provide general information on the collection and ongoing conservation practices, explain the specific activities of the proposed conservation project as they occur, and relate these activities to conservation in the wild and in the home landscape.

NARRATIVE QUESTIONS-EDUCATION COMPONENT

1. WHAT IS THE DESIGN OF THE EDUCATION COMPONENT?

The proposed education component will consist of an interpretive sign system for the oak collection of the UC Davis Arboretum that will provide general information on the collection and ongoing conservation practices, explain the specific activities of the proposed conservation project as they occur, and relate these activities to conservation in the wild and in the home landscape. Signage will be designed to engage and challenge Arboretum visitors, to enhance the visitor experience, and ultimately to change visitor attitudes and behavior.

The goals of the project are to educate Arboretum visitors on the value of taxonomic collections in public gardens, the importance of conserving plant collections, the specific conservation practices used in botanical gardens and arboreta, and how these methods might be adapted and applied to plants in public and private landscapes. In addition, signs will educate visitors about the threat to oak biodiversity in California posed by the current epidemic of the Sudden Oak Death pathogen, and the roles that botanic gardens and all Californians can play in containing the epidemic.

We will convene an Exhibit Team (consisting of the Education Director, Communications Director, Interpretive Specialist, and exhibit volunteers) to develop a signage program incorporating permanent and changing signs. Sign messages, text and graphics will be developed using an intensive process of prototype generation and formative evaluation (on-site testing of visitor responses to sign mock-ups) developed by UC Davis Arboretum Director Kathleen Socolofsky in her previous position as Education Director at the Desert Botanical Garden in Phoenix (see Creating a Visitor-Centered Garden, attached).

Signs will be designed in-house by the Communications Director. Changing signs will be created using adhesive vinyl on moveable panels. Permanent signs will be fabricated with a bonded graphics surface material that incorporates digitally-printed high-resolution graphics. This material, produced by Folia Signage, is an exciting new addition to the exhibit design field. It is UV-, impact-, and graffiti-resistant, fire-retardant, can be cut, drilled, and shaped, and is self-supporting, so does not require a frame or backing panel.

The project will be carried out over a twelve-month period, from May 2003 through April 2004. This schedule will allow us to interpret the activities of the conservation project using a responsive, informal system of changing signs, and to create and install permanent exhibits on more general themes. We estimate that Arboretum staff will spend 848 hours on the project. This includes 120 hours for project planning, 528 hours for exhibit development and testing, 160 hours for graphic design, and 40 hours for installation. We have recently completed a similar interpretive signage project in our new home demonstration garden and have accurate records on time and costs.

We plan to produce four large permanent signs and ten changing signs that will be installed along the main path through the oak grove. Changing signs may also be used to interpret oaks at other locations in the Arboretum, such as the heritage valley oaks that appear as boundary markers on the earliest maps of this area.

The education component is intimately tied to the conservation project; it uses the work of the project as its subject. The education component will transform the conservation project from a minor inconvenience for visitors (equipment, piles of soil, limited access) to a fascinating exhibit on the behind-the-scenes work of botanical gardens, arboreta, and other holders of biological collections. At the same time, it will illuminate the importance and urgency of conserving living collections in general, this oak collection in particular, and plants in the landscape, especially in light of the epidemic threatening California oaks.

2. WHAT ARE THE ANTICIPATED BENEFITS OF THIS EDUCATIONAL PROJECT?

We expect this project to be very well received by our audience. In September and October 2001 we conducted an extensive survey of our audience, using the Drucker Self-Assessment process. More than 4,000 people responded to the survey, and we conducted more than 70 in- depth interviews with representatives of a wide range of customer groups. There was remarkable consensus across groups in their ratings of the improvements they would like to see at the Arboretum. The top two priorities for all groups were to improve the appearance of the gardens and to interpret the collections with educational signs, labels., and exhibits. This project will meet a clear and urgent need for more information about the collections.

We expect that visitors to the oak grove will come away with a greater understanding of the work of a botanical garden and an appreciation for the importance of taxonomic collections for research, teaching, and the preservation of biodiversity. They will learn something about the conservation of living plant collections, and the relationship of museum conservation to plant conservation in the wild and in private gardens.

One of the most important benefits of the signage program will be to educate visitors about Sudden Oak Death, the disease that has killed hundreds of thousands of wild oaks in California and continues to spread unabated. Humans have been implicated in the spread of the disease as they transport soil, plants, or firewood from infected areas. The disease has not yet been detected in this county, but has in two adjacent counties. Our educational efforts may help slow the spread of the disease by encouraging visitors to recognize and report the symptoms in infected trees and to avoid transporting contaminated materials.

This project will also benefit the Arboretum. An audience that understands the value of scientific collections, and the distinction between a botanical garden and a park, is an important ally. Particularly in these difficult economic times, it is advantageous to museums to cultivate advocates in the community I and this project should increase the Arboretum's visibility and utility, and help us carry out our role as a living classroom and laboratory .

A discussion of the project and reproductions of the signs will be published in the Arboretum's quarterly Review. The support of IMLS will be acknowledged on each of the signs and in the publication. The project will also be disseminated through the Arboretum's docents, who will be trained to incorporate the project into their guided tours.

We expect to continue to use the changing sign system developed for this project to interpret conservation activities in the Arboretum, as well as other seasonal or short-lived features of interest to visitors. The permanent signs in the oak grove will last for years with regular maintenance.

3. HOW DOES THE PROJECT BUDGET SUPPORT THE EDUCATION COMPONENT GOALS AND OBJECTIVES?

The project budget was developed by determining the activities necessary to develop and implement a signage program for the oak collection, and identifying the labor, supplies, equipment, and services necessary to carry out each activity. Labor costs were determined by estimating the amount of time needed for each activity, assigning specific staff or volunteers to each task, and applying the hourly rates of the person(s) assigned. We completed a similar project in our new home demonstration garden in 2001, so we had accurate and recent records of time and costs. Material costs were determined by actual quotes from suppliers.

We believe that the estimated project costs are reasonable and appropriate to the scope of the project. Many museums produce signage "from the top down," by allowing scientists or curators to write sign text and professional designers to create the signs. In practice, such signs are frequently ignored by visitors or ineffective at conveying the intended message. Using formative evaluation and testing to evaluate visitor responses during the exhibit development process requires a greater initial investment of time but results in a vastly more successful product.

We will include volunteers in the exhibit development process both to keep costs down and because they can effectively represent the visitor perspective and bring a broad range of experiences and interests to the process. Relative to traditional materials (fiberglass embedment, porcelain enamel), the Folia material we will use for the signs is exceptionally durable, flexible, and inexpensive. Because it does not require a backing panel it can be mounted on a simple pedestal, further reducing costs.

4. WHAT ARE THE QUALIFICATIONS AND RESPONSIBILITIES OF THE PROJECT PERSONNEL?

Carmia Feldman, Education Director, will have the overall responsibility for this project. She will convene the Exhibit Team and lead the exhibit planning, design, and testing process. She holds a Master of Science degree in Ecology and is a doctoral candidate in Science Education at UC Davis. Her area of specialization is informal science education at public gardens. Her expertise in the subject matter and in teaching methodologies and theories of learning make her participation in this project essential.

Diane Cary, Communications Director, will participate in the exhibit development process, create the final graphic design for the signs, and manage the production and installation of the exhibits. She holds a Master of Education degree with a specialization in Nonformal and Community Education, and is an experienced writer and graphic artist. Using an in-house graphic designer is cost effective and allows us to test multiple versions of sign mock-ups with visitors, in order to maximize the signs' ability to attract and hold visitor attention and convey key messages.

Weatherspoon Art Museum

Greensboro, North Carolina

Project Type: Treatment
IMLS Education Award: $4,247
Total Grant Award: $49,711
Match: $52,896
Total Project: $102,608
Museum Budget: $1,283,303

$34,289 to treat 18 paintings by the modernist painter, Gregory Ivy (1904-1985), the founder of Weatherspoon and the individual most responsible for its institutional philosophy. $4,247 to develop two public programs, an interpretive gallery guide, and docent training in conjunction with the conservation treatment of Ivy's paintings.

Narrative Questions

1. What is the design of the education component?

The Weatherspoon Art Museum seeks $4247 for two public programs, an interpretive gallery guide, and docent training in conjunction with the conservation treatment of works of art by Gregory Ivy. The goal of the education component is to provide information to our visitors on the conservation of paintings and works on paper in general and on the treatment of Ivy's works specifically.

The initial education activity will be a docent training session, which will consist of a lecture by Ruth Barach Cox, painting conservator. The lecture will prepare docents to discuss with visitors the issues of conservation, the processes being used, and the Ivy collection itself. The docent training will take place prior to the opening of the exhibition and will be supplemented with research materials on the artist.

For visitors who do not receive information by way of a docent-led tour, we will also create a full-color, tri-folded interpretive gallery guide to accompany the Ivy exhibition. The free guide will specifically address the issues of conservation, the techniques used, and images of works before and after treatment so that the guide will be of use after the exhibition. The guide will be designed and produced prior to the exhibition opening and will be available in limited supplies to other exhibition venues. The guide is not intended to replace the more in-depth exhibition catalog. Instead it will be designed as an introduction to the conservation itself and will include easily accessible reference information.

Lastly, two public programs will be offered to specifically address conservation and the Ivy collection. Conservator Jane Sugarman will lead a full-day workshop on paper conservation. The workshop will include a slide lecture citing examples from the Ivy collection and provide an opportunity for participants to use what they learn in examining their own works on paper. The workshop will be open to the public, though registration will be required and will include a minimal cost for lunch. Participants will be invited to bring works on paper for discussion and examination. Ruth Barach Cox will also provide a public lecture addressing the conservation of Ivy's paintings. Like the conservation workshop, the lecture will coincide with the Ivy exhibition so that visitors will be able to make a direct connection to the work on view. The lecture will be free of charge.

The education component will be supervised by Ann Grimaldi, Weatherspoon curator of education. Approximately 5% of her time will be allocated to this project. Consultants for the project will include conservators Ruth Barach Cox and Jane Sugarman. In addition to their allocated time on conservation treatment, approximately 12 and 30h.ours respectively will be spent in preparation for these public programs. Additional museum staff will include a UNCG student assistant at 10% of his/her time during the academic year. Preparation for the education component will begin in Fall 2003 with activities implemented in late 2004 and 2005, in accordance with the museum's time frame for conservation and exhibition of the Ivy collection.

An interpretive gallery guide will be created for the education component of this project. One thousand full-color, tri-folded guides will be produced and offered in limited quantities to other venues exhibiting the Ivy collection. In addition, a postcard promoting the public programs on conservation will be created in-house and mailed to Weatherspoon members.

Since the conservation of the paintings and works of paper will be done off-site, visitors will see little evidence of the conservation in progress. Because of this, we have an opportunity to discuss by way of tours, lectures, publications, and the treated works themselves, what visitors rarely see in an art museum. The Ivy works represent an integral part of in the history of the Weatherspoon and our mission.

2. What are the anticipated benefits of this educational project?
The Weatherspoon recognizes that many of its visitors are first time viewers of modem art. Whether for college students, community members, or school children, programs are designed to provide information in a manner that is accessible and personally meaningful. Because the Ivy conservation project will happen off-site and away from visitors, we feel that it is imperative that we take steps to explain, document, and show the process. In so doing, we hope to 1) inform visitors on what conservation is and what conservators do and 2) discuss issues of conserving modem works of art and 3) provide visitors with another way to approach works of art.

We feel that programs and publications, which aim to inform and elicit response, have the long-term benefit of empowering visitors. Our ongoing goal is to provide tools for visitors to make connections to modem and contemporary works of art. There are no current plans to continue this project beyond the Ivy exhibition though gallery guides will be available to other venues for the exhibition.

3. How does the project budget support the education component goals and objectives?
Project expenses were determined on current rates for lectures, travel expenses, and the designing and printing of gallery guides. The costs are reasonable given similar types of education activities we present. The project cash-match will consist of staff support in organizing and promoting the activities, preparing materials, and training docents.
To maximize the outcomes of docent training, it is recommended that the docent lecture with the conservator be scheduled toward the end of the conservation treatment in preparation for tours. All other activities will take place after the works have been conserved and will be concurrent with the Ivy exhibition

4. What are the qualifications and responsibilities of the project personnel?
Curator of education, Ann Grimaldi, is responsible for directing the museum's education programs including docent training, public programming, and the writing of interpretive materials for school and family groups. She has over nine years of museum education experience and holds a Master of Education degree from Springfield College. She has been at the Weatherspoon Art Museum since 2001, and was assistant director of education at the Worcester Art Museum previously.

Conservators Ruth Barach Cox and Jane Sugannan will lead a docent talk/public lecture and public conservation workshop, respectively, in conjunction with the Ivy conservation project and exhibition. Ruth Barach Cox received her Master of Science in Art Conservation from the Winterthur Museum/University of Delaware Program in 1987, specializing in painting. Since 1989, she has been in private practice in Raleigh, NC, and has done recent conservation work for the Weatherspoon. Jane Sugarman received her Master of Science in Conservation from the Winterthur Museum/University of Delaware Program in 1986. She has been a paper conservator in private practice in Greensboro, NC since 1988 and has also done conservation work for the Weatherspoon.

Clerical support for the project will be provided by a museum approved graduate student assistant from the UNCG Art department. The assistant position is offered for an academic year and involves up to twenty hours per week in the education department.

Oregon Zoo (Sample Education Component)

Portland, Oregon

Project Type: Environmental Improvements
IMLS Education Award: $9,997
Total Grant Award: $50,960
Match: $52,289
Total Project: $103,249
Museum Budget: $20,510,609

$40,963 to install a rubberized "foot-friendly" flooring system in the Zoo's indoor Asian elephant facility to help improve elephant foot care. The Zoo will also conduct a short-term study of elephant behavior on concrete versus rubberized surfaces to demonstrate any behavioral changes and/or flooring preferences. $9,997 to update an existing educational display incorporating data from this project and add part-time interpretive staff in the elephant viewing room to discuss the flooring project and elephant foot care with visitors.

OREGON ZOO
2003 Conservation Project Support
Environmental Improvement Project: Foot-Friendly Elephant Flooring
Education Component Narrative

1 WHAT IS THE DESIGN OF THE EDUCATION COMPONENT?
Oregon Zoo design services and education staff plan to upgrade existing interpretive information provided to Zoo visitors on the topic of elephant foot care. Two primary activities will be supported by an education component grant of $10,000: 1) creation of an updated interpretive display related to elephant's feet and the new "foot-friendly" flooring project, and 2) hire interpretive staff to discuss this project and elephant foot care with visitors

The current display in the Zoo's indoor elephant viewing room (adjacent to the "Front Room," see Appendix ll) is aging, and does not discuss the effectiveness of the soft pliable floor surfaces that the Zoo has been using to minimize foot care problems with the elephant h~d. The existing display case would be renovated, and the interpretive materials would be rewritten to include this topic in the display. In addition, samples of the flooring types that the Zoo has experimented with would be displayed close-up for visitors to examine.

The Zoo requests $2,400 funding to renovate the existing casework for the elephant foot care display. The renovation would include refinishing of the existing display case, copywriting to upgrade the current interpretive text to include information on pliable floor surfaces, and reproduction of interpretive panels for the display.

The Zoo's Asian elephant exhibit is one of the most popular destinations for Zoo visitors. The Zoo plans to take advantage of the new elephant flooring project to hire part-time interpretive staff to talk with visitors and utilize the new display materials in the elephant "Front Room." Education component funding ($7,597) would enable the Zoo to hire and train exhibit interpreters to be stationed in the elephant "Front Room" for a total of778 hours during busy holiday and weekend periods between October 2003 through June 2004. The Zoo is currently creating a lockable storage area in the Front Room that will conveniently house rolling carts, biofacts, elephant foot care tools and other materials for use by interpretive staff. These teaching aids, some of which are large and bulky, are currently stored elsewhere on Zoo grounds and are underutilized.

The Zoo's goal is to bring awareness of the importance of new research and techniques in caring for elephants in captivity .The Oregon Zoo has been a leader in research on Asian elephants. That research is ongoing. This refurbished display and additional interpretive staff will provide our visitors with current information on the Zoo's work to improve care for elephants in captivity.

Staff time: Pat Kaczmarek, Design Coordinator, 20 hours; David Kato, Senior Graphic Designer 40 hours; Avory Gray, Management Technician, 20 hours; Roger Yerke, Education Programs Manager, 20 hours.

Schedule: The storage area wiil be completed during 2002 and is not included in the proposed scope of work. The upgrades to the display would be coordinated with the installation of the new flooring surface. Renovations would take place in July and August of2003, with a completion date of October 2003 for final installation of interpretive graphics and flooring samples. Part-time interpretive staff will be hired to start work at the elephant exhibit in October 2003 through June 2004.

The renovated display in the Oregon Zoo's elephant viewing room will focus on elephant foot care. The display and interpretive staff would share information, photo and artifacts that describe:

- variations in elephant activity in the wild as compared to captive environments
- he anatomy of elephant feet
- foot cleaning techniques and benefits
- tools and special sandals that are employed to maintain healthy feet in captive elephants
- Zoo efforts to assess the behavioral and physiological benefits of pliable, yielding floor surfaces on captive elephants
- information on the composition and application of new pliable surfaces (Intracorp/Familian International's "Natural Path" product) funded by IMLS.

2. WHAT ARE THE ANTICIPATED BENEFITS OF THE EDUCATIONAL PROJECT?
There is growing public concern about the quality of care being afforded to animals in captivity. Zoos in the United States have been researching animal care issues and have made many applied research discoveries that have had significant impacts on the types of care provided to their living collections. The Oregon Zoo has been a leader in these kinds of research, adding to the body of knowledge in the zoo profession about the effects of animal enrichment, diet, exercise programs and physical environments.

Our educational program supports the Zoo mission "to inspire our community to create a better future for wildlife." Zoo educators and exhibits strive to raise public awareness of an appreciation for the applied research that is ongoing at the Zoo, and the ways that the research has resulted in better animal care practices. The renovation of the elephant foot care display in our elephant viewing room is an opportunity to bring this research to a majority of Zoo visitors. Oregon Zoo's elephant exhibit is one of the most popular and 8% of our 1.3 million visitors report this as their favorite exhibit.

According to the results of exit surveys of Oregon Zoo visitors, our guests are best able to recall new information acquired during their visit if it is something they were told. Not only do they remember information better when it comes from a Zoo staff member, visitors often cite their interaction with a member of our staff as among the most enjoyable part of their entire Zoo visit. In recognition of this, the Zoo's education division coordinates a two-pronged effort to make this type of interaction possible. A volunteer-based Animal Talker program provides trained docents at popular Zoo exhibits and a Sidewalk Naturalist program places education staff at exhibits that require more extensive interpretation.

The hiring, training and scheduling of a Sidewalk Naturalist in the elephant viewing room will enhance the level of interpretation currently available to visitors to this exhibit. The presence of an interpreter in the public area will help our visitors to understand the new flooring project, the Zoo's daily elephant routines and to more fully understand the efforts of keepers as visitors see them working with elephants; trimming footpads, conducting training sessions and other procedures.

3. HOW DOES THE PROJECT BUDGET SUPPORT THE EDUCATION COMPONENT GOALS AND OBJECTIVES?
Costs for the interpretive display upgrade are based on estimates for the copywriting, interpretive panel fabrication, artifact mounting and case refinishing. Costs are based on estimates from reliable suppliers.

Project costs include the expense of renovating and upgrading the interpretive materials in the Oregon Zoo elephant viewing room's display on elephant foot care. Design services staff routinely work on this kind of interpretive project, and are familiar with the material~ and timeline required to fabricate and install an interpretive display that will function well under the high visitor frequency that is typical at the Zoo.

Interpretive staff costs are based on prevailing wages paid for part-time interpretive 'Staff by the Zoo's education services division. The Zoo's education division annually recruits and hires more than 50 part-time staff to work in a variety of education programs -including the on-grounds Sidewalk Naturalist program. Sidewalk Naturalists are paid at the rate of $9 to $10 per hour. Individuals hired for work in the elephant viewing room will work on weekends and holidays when the Zoo is more heavily visited.

The Zoo's in-kind match is based on projected salaries, wages, and fringe benefits for current staff in the Zoo's design services and education divisions.

4. WHAT ARE THE QUALIFICATIONS AND RESPONSIBIBILITIES OF THE PROJECT PERSONNEL?

Pat Kaczmarek has been the Design Coordinator at the Oregon Zoo for three years. One of her first projects at the zoo was to renovate the elephant viewing room. The budget allowed for physical improvements to the space, but did not provide an opportunity to renovate the existing interpretive materials, or enhance them with information on current research on elephant foot care.

Her previous experience is in environmental and exhibit design for Anderson Kryger, Inc. and the Oregon Historical Society in Portland Oregon, where she worked as an exhibit designer and coordinator. She was a senior exhibit designer at the California Academy of Sciences in San Francisco for five years, previous to moving to the Portland area in 1993.

Ms. Kaczmarek will coordinate the research, writing and design components of the interpretive display, and monitor the budget and schedule.

Mr. Roger Yerke has been with the Oregon Zoo since 1978 and serves as Education Programs Manager. His relevant experience includes over 20 years of design, development, implementation, management and evaluation of formal and informal science education programs. Mr. Yerke led the development of the Sidewalk Naturalist program and oversees an extensive array of on-grounds and off-site education programs offered by the Zoo. He will coordinate the integration of elephant flooring project and foot care information into the training of the part-time Sidewalk Naturalist hired for this activity and will oversee the budget and schedule.